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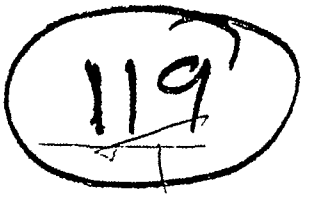

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STUDIES IN FAMILIAL NEUROSYPHILIS

I CONJUGAL NEUROSYPHILIS *

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AND
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The clinical evidence favoring the existence of a neurotropic strain of *Spirochaeta pallida* lies partly in the comparative frequency of neurosyphilis in both partners to a marriage and in their children The literature is replete with reports of individual families in which this association has been observed Those who support the theory of a single undifferentiated strain of the organism have justly contended that the occurrence of conjugal neurosyphilis must be demonstrated to be more than merely coincidental before it can be employed as an argument by the dualists It must be shown that the incidence of neurosyphilis among the marital partners and the children of neurosyphilitic patients is greater than that found among any unselected class of syphilitics In order to accomplish this end, it is necessary to examine by all available means the families of a large number of neurosyphilitics The tedious aspect of this research may account for the paucity of adequate references in the American and English literature, though numerous valuable contributions have been made by German neurologists

In the light of our present knowledge of asymptomatic neurosyphilis, such a routine study must include as indispensable parts of the examination a careful anamnesis, physical and neurologic examination, and investigation of the Wassermann reaction of the blood and of the cytobiology of the cerebrospinal fluid So far as we have been able to determine, no investigations have been reported in which all these necessary measures were employed

We have purposely avoided a review of the individual family reports in the literature, of the isolated instances in which several persons infected with syphilis from a single source have all developed neurosyphilis, and of statistical studies carried out before the advent of the Wassermann reaction and therefore based on clinical impressions alone It is necessary, however, to refer to the work of Fischer,[1] in whose paper the earlier literature is reviewed This investigator found only ten cases of conjugal neurosyphilis among the partners of 395 paretics His conclusion as to the infrequency of the association is supported by the report of Hannard and Gayet,[2] who observed only twenty-five cases of conjugal paresis among the partners of 2,429 paretics Their observations extended over a period of thirty-eight years On the other hand Meyer[3] found eight cases of neurosyphilis among twenty-eight partners of neurosyphilitics and Hauptmann[4] reports eleven instances among thirty-six partners Routine examinations of all partners are not reported by these workers, so that an estimate of the actual frequency of conjugal neurosyphilis is impossible from their figures

The later investigators, especially Plaut and Goring Schacherl,[6] Raven,[7] von Rohden[8] and Seelert[9] in Germany, and the Solomons[10] in this country, have reported more elaborate studies In addition to the investigation of marital partners, all of these authors lay much stress on the status of health of the children of neurosyphilitic marriages In the present study the results of the examination of children of neurosyphilitic parents have been omitted, in order not to cloud the issue of conjugal neurosyphilis It is expected that these findings will be reported in a future communication The results obtained by these various investigators have been based on history, physical examination and blood Wassermann only, the study of the spinal fluid, which we regard as essential for reasons presently to be considered, having been omitted A comparison of their results with those which we have obtained will be considered presently

In this paper is presented in summary form the results of the examination of the marital partners of fifty neurosyphilitic patients Fifty-two partners (forty-two wives, two mistresses and eight husbands) were examined by the physical and serologic methods outlined Certain qualifying statements regarding the results must be made The material is so far as possible unselected, but, as Solomon[10] points out, an unconscious selection is difficult to avoid, particularly in such

* From the Syphilis Department of the Medical Clinic Johns Hopkins Hospital

* Read before the Section on Practice of Medicine at the Seventy Second Annual Session of the American Medical Association Boston June 1921

1 Fischer O Gibt es eine Lues nervosa? Ztschr f d ges Neurol u Psychiat 16 120 1913

2 Hannard and Gavet De la paralysie generale et de la tabo paralysie conjugales dans le Departement du Nord 1871 a 1909 Ann med psychol 69 200 1911

3 Meyer E Zur Kenntnis der konjugalen und familiaren syphilogenen Erkrankungen des Zentralnervensystems Archiv f Psychiat 45 964 1909

4 Hauptmann A Serologische Untersuchungen von Familien syphilogener Nervenkranker Ztschr f d ges Neurol u Psychiat 8 36 1912

5 Plaut F and Goring M H Untersuchungen an Kindern und Ehegatten von Paralytikern München med Wchnschr 58 1959 1911

6 Schacherl M Ueber Luetikerfamilien Jahrb f Psychiat u Neurol 36 521 1914

7 Raven, W Serologische und Klinische Untersuchungen bei Syphilitiker familien Deutsch Ztschr f Nervenh 51 342 1914

8 Von Rohden F Ueber die Pathologie der Paralytikerfamilie Ztschr f d ges Neurol u Psychiat 37 110 1917

9 Seelert H Untersuchungen der Familienangehorigen von Paralytikern und Tabikern auf Syphilis Monatschr f Psychiat u Neurol 41 329 1917

10 Solomon H C and Solomon M The Family of the Neurosyphilitic Ment Hyg 2 71 1918 The Effects of Syphilis on the Families of Syphilitics Seen in the Late Stages Soc Hyg 6 469 1920

a small series as this The results must therefore not be regarded as absolute, since they require confirmation from a larger series of patients In most instances both the original neurosyphilitic patient and his partner were examined personally, a few families were seen in the Phipps Psychiatric Clinic of this hospital [11] The neurologic examination was usually made by one of us (Moore), and included the usual routine procedures with the exception of a careful sensory examination which was not carried out in any case The available data includes anamnesis with special attention paid to syphilis, physical examination, and blood and spinal fluid examinations in both the original patient and the marital partner

The material may be considered in three groups, according to the diagnosis of the original patient In the fifty families, the type of neurosyphilis in the original patient was paresis, twenty-one times, tabes, eight times, and cerebrospinal syphilis of various types, twenty-one times

GENERAL PARALYSIS

The partners of the twenty-one paretics include twenty-two individuals (eighteen wives, one mistress and three husbands) The essential data are presented in Table 1 Six were, so far as could be determined, normal In sixteen, or 72 7 per cent, there was definite

11 We are indebted to Dr Phyllis Greenacre for permission to use this material

TABLE 1—GROUP OF GENERAL PARALYSIS FAMILIES

Family	Duration of Marriage Years	Syphilifer	Diagnosis of Syphilifer	Duration of Syphilis Years	Condition of Partner (Wife or Husband)							Diagnosis in Partner
					History of Syphilis	Physical Examination	Blood Wassermann Test	Cerebrospinal Fluid				
								Cells	Globulin	Wassermann Test	Colloidal Tests	
5	3 mos	Husband	G P	7	None	Negative	0	0	0	0	Negative	Nonsyphilitic
8	7	Husband	G P	10	None	Negative	0	2	0	0	Negative	Nonsyphilitic
10	17	Husband	G P	6	Chancre 4 months after husband	Negative	4	0	0	0	Negative	Syphilis Wassermann
13	6	Husband	G P	?	(a) Wife Rash 3 years after marriage no trouble since	Anisocoria right pupil sluggish speech stumbling reflexes +	4	36	++	4	Paretic	General paresis
					(b) Mistress Lived with man before his marriage in 1912 rash malaise gumma soft palate 1916 in 1920 headache, diplopia	Complete left III and VI nerve paralysis reflexes +++	0	16	++	2	Paretic	Meningovascular neurosyphilis
16	14	Wife	G P	21	None	Negative	0	0	±	0	Negative	Nonsyphilitic
18	3	Husband	G P	?	None	Negative	4	65	++++	4	Paretic	Asymptomatic neurosyphilis
20	2	Husband	G P	13 ?	None	Negative	0	0	0	0	Negative	Nonsyphilitic
21	10	Wife	G P	12	None	Negative Wassermann reaction fast	4	2	0	0	Negative	Syphilis Wassermann
22	6	Husband	G P	10	None	Negative	4	68	++++	4	Paretic	Asymptomatic neurosyphilis
23	8	Husband	G P	?	None	Negative	0	0	0	0	Negative	Nonsyphilitic
26	17	Husband	C P	?	None	Negative	4	2	0	0	Negative	Syphilis Wassermann
30	3	Husband	G P	?	Rash 3 months after marriage nothing since	Negative	0	40	++++	4	Paretic	Asymptomatic neurosyphilis
33	22	Husband	G P	?	Primary after marriage followed by secondaries	Negative neurologic examination aortitis	4	2	0	0	Negative	Syphilis cardiovascular aortitis
34	20	Husband	G P	25	None	Anisocoria otherwise negative	4	52	++++	4	Paretic	Cerebrospinal syphilis unclassed
40	21	Husband	G P	20+	Anular rash lasting 2 weeks 20 years ago no further complaint	Anisocoria A R. pupils reflexes ++	4	11	++++	4	Paretic	General paresis
43	15	Wife	G P	?	None of early syphilis vertigo loss of libido and potentia lightning pains for 1 year	A R pupils K K and A J absent Romberg +	0	16	+++	4	Paretic	Tabes dorsalis
44	16	Husband	G P	?	None	Negative	4	2	0	0	Negative	Syphilis Wassermann
46	20	Husband	G P	?	None of early syphilis 6 months ago loss of memory and ethical sense euphoria grandiose ideas	Pupils irregular sluggish tremor reflexes +++ speech defect	4	8	++	4	Paretic	General paresis
47	24	Husband	G P	26	None	Pupils unequal right sluggish otherwise negative	4	1	0	0	Negative	Cerebrospinal syphilis?
48	25	Husband	G P	25	None of early syphilis transient hemiplegia 15 years ago 10 years after marriage	Multiple cerebral vascular insults	0	2	+	2	Negative	Vascular neurosyphilis
50	20	Husband	G P	30	None	Negative	0	2	0	0	Negative	Nonsyphilitic

evidence of syphilis provided either by history, the presence of lesions, or a positive Wassermann test in the blood Eleven, or 68 7 per cent, of these sixteen syphilitic partners had neurosyphilis The type of neurosyphilis was paretic, three times, tabetic, once, vascular, once, meningovascular, three times, and asymptomatic three times In other words, the diagnosis of neurosyphilis was permissible in only eight of these eleven individuals on the basis of clinical evidence, in the remaining three it was obtained only by means of a routine spinal fluid examination In two of the asymptomatic cases there was neither history nor clinical evidence of syphilis, but the blood Wassermann test was positive, in the third there was a doubtful history of a rash three months after marriage, an absolutely normal physical examination, and a negative blood Wassermann test The spinal fluid in this patient showed 40 cells, a four plus globulin reaction, Wassermann reaction positive with 0 2 c c, and a paretic gold curve

(meningovascular), nine times, meningeal, four times, and asymptomatic, four times (Table 3) Syphilis was present in the twenty-two partners (eighteen wives, one mistress and two husbands) eighteen times (81 8 per cent) Of the syphilitic partners, however, only five or 27 7 per cent, were definitely neurosyphilitic on the basis of positive spinal fluid findings, while an additional partner showed clinical signs of neurosyphilis with a negative spinal fluid If this case is included 33 3 per cent of the syphilitics had neurosyphilis The incidence of neurosyphilis among partners in this group was therefore only about one half of that found in the groups of tabetics and paretics

TABLE 2—GROUP OF TABES FAMILIES

Family	Duration of Marriage Years	Syphilifer	Diagnosis of Syphilifer	Duration of Syphilis Years	Condition of Partner (Wife or Husband)						Diagnosis in Partner
					History of Syphilis	Physical Examination	Blood Wassermann Test	Cerebrospinal Fluid			
								Cells	Globulin	Wassermann Test	Colloidal Tests	
7	20	Husband	Tabes	17	None of early syphilis 2 years ago headache diplopia 1 year ago right hemiplegia transient aphasia	Right hemianesthesia hemianesthesia	4	?	+++	4	?	Vascular neurosyphilis
15	13	Wife	Tabes	? Tabetic 3 yrs	Headaches for 3 years for 4 mos difficulty with urination light ning pains	Pupils normal K k and A J absent	0	26	++++	4	Paretic	Tabes dorsalis
24	23	Husband	Tabes	25	None of early syphilis gumma ton sil 1 year ago	Negative	0	1	0	0	Negative	Syphilis, tertiary treated
29	4	Wife	Tabes	7	None	Negative	0	2	0	0	Syphilitic zone	Nonsyphilitic
32	23	Husband	Tabes	17	None	Negative	0	58	++++	4	Paretic	Asymptomatic neurosyphilis
38	20	Husband	Tabes	7	None of early syphilis many vague complaints	A R pupils k K and A J absent Romberg +	4	38	+++	4	Paretic	Tabes dorsalis
42	13	Husband	Tabes	?	None	Negative	0	0	0	0	Negative	Nonsyphilitic
49	17	Husband	Tabes	23	None	Negative	4	0	0	0	Negative	Syphilis Wassermann

TYPE OF NEUROSYPHILIS IN MARITAL PARTNER

It may be seen from Table 4 that in eight of the twenty-one neurosyphilitic partners the type of neurosyphilis was the same as in the original patient (conjugal paresis, three times, tabes, twice, and cerebrospinal syphilis of the same type, three times) In six

TABES

Six wives and two husbands of tabetics were examined (Table 2) Six of these eight partners had syphilis, of whom four were neurosyphilitic The neurosyphilitic partner was tabetic twice, hemiplegic once, and asymptomatic once The cytobiology of the spinal fluid was positive in all four instances The asymptomatic partner is of particular interest, since she gave neither a history nor any clinical evidence of syphilis (though one of her children was syphilitic), and the blood Wassermann test was negative Routine examination of the spinal fluid revealed 58 cells, a four plus globulin reaction, Wassermann test positive with 0 1 c c, and paretic colloidal gold and mastic curves The number of families in this group is too small to permit definite conclusions Of the material available however, 75 per cent of the marital partners had syphilis, and of these, 66 6 per cent had neurosyphilis

CEREBROSPINAL SYPHILIS

The neurosyphilis of the twenty-one original patients in this group was vascular in type, four times, diffuse

of the remaining thirteen instances, neurosyphilis was manifest in the partner by positive spinal fluid findings only In each of these instances the cytobiology of the fluid was of the same type cell count between 30 and 100, globulin reaction and Wassermann test strongly positive, and colloidal tests paretic Cases of this type have been designated by Southard and Solomon as paresis sine paresi, and our own experience leads us to believe that the majority of patients presenting this type of spinal fluid abnormalities will ultimately develop neurosyphilis of the parenchymatous type These figures demonstrate that, contrary to the statements of Raven, Fischer and others, conjugal neurosyphilis of the same type is relatively common

RELATION OF SYPHILIS IN MARITAL PARTNER TO TIME OF MARRIAGE AND DURATION OF SYPHILIS IN ORIGINAL PARTNER

The average duration of marriage is 11 9 years for the paretic, 17 8 years for the tabetic, and only 6 7 years for the cerebrospinal syphilitic group The average duration of syphilis in the syphilifer shows the same

difference in grouping paretic group, seventeen years, tabetic, sixteen years, cerebrospinal syphilitic, nine years In Table 5 is shown for the whole group that the danger of infection for the partner increases as the time of infection in the syphilifer approaches the year of marriage When the syphilifer was infected after marriage, 909 per cent of the marital partners acquired syphilis The incidence is almost as high in the sixteen cases in which it was impossible to determine the date of the original infection Seelert [6] lays great stress on this time relation, and concludes from a study of his material that the spouse may escape syphilis if the original infection took place three years or more before the marriage Our own data are insufficient to corroborate or deny this conclusion, but in five families in which the original member was infected five years or more before marriage, the partner contracted syphilis twice

LESIONS OF EARLY SYPHILIS IN THE MARITAL PARTNERS OF NEUROSYPHILITICS

An additional point of difference between the paretic and tabetic groups and the group of cerebrospinal syphilitics lies in the apparent latency of infection in the syphilitic partners Raven [7] draws special attention to this latency of infection In twenty-seven families reported by him in which both partners were certainly or probably neurosyphilitic, symptoms of early syphilis

TABLE 3—GROUP OF CEREBROSPINAL SYPHILIS FAMILIES

Family	Duration of Marriage Years	Syphilifer	Diagnosis of Syphilifer	Duration of Syphilis Years	Condition of Partner (Wife or Husband)						Diagnosis in Partner
					History of Syphilis	Physical Examination	Blood Wassermann Test	Cerebrospinal Fluid			
								Cells	Globulin	Wassermann Test	Colloidal Tests	
1	3½	Husband	Vascular epilepsy	?	Late secondary rash 6 mos after husband s nervous symptoms	Negative	4	3	0	0	Negative	Syphilis Wassermann
6	2	Husband	Vascular hemiparesis	2	Primary 2 mos after husband s primary	Mydriasis otherwise negative	0	8	0	0	Negative	Syphilis latent
20	16	Husband	Vascular hemiparesis	14	Negative	Anisocoria sluggish pupils auditory hallucinations	4	112	+++	4	Paretic	General paresis
26	2	Husband	Vascular hemiparesis	4	Negative	Negative	4	2	0	0	Negative	Syphilis Wassermann
9	8	Husband	C N S unc	6	Negative	Negative	0	0	0	0	Negative	Nonsyphilitic
3	10	Husband	C N S unc	4	Secondary rash after husband s infection	Negative	4	0	0	0	Negative	Syphilis Wassermann
4	6	Husband	C N S unc	9	Negative	Negative	0	0	0	0	Negative	Nonsyphilitic
14	3	Husband	C N S unc	4	Doubtful history of rash	Negative	4	27	+++	4	Paretic	Asymptomatic neurosyphilis
19	7	Husband	C N S unc	?	(a) Wife None of early syphilis gumma of soft palate	Negative except for tertiary lesion	0	0	±	0	Negative	Syphilis tertiary
					(b) Mistress Negative	Negative	0	0	0	0	Negative	Nonsyphilitic
31	13	Husband	C N S unc	14	Negative	Negative except for hypertension	0	1	±	0	Negative	Nonsyphilitic
37	7	Husband	C N S unc	27	Just after marriage rash lasting 4 wks for 2 years headache girdle sensation	Anisocoria eccentric irregular pupils reflexes +	0	8	+	0	Negative	Cerebrospinal syphilis unclassed
39	3	Husband	C N S unc	6 ?	Alopecia 5 months ago congenitally syphilitic child	Negative	0	63	+++	4	Paretic	Asymptomatic neurosyphilis
41	7	Husband	C N S unc	9	Extragenital (lip) 2 years ago well treated	Negative for neurologic signs	0	5	0	0	Negative	Syphilis primary treated
11	5	Wife	C N S asymp		Infected 2 years before wife whose sp p was routine diagnostic measure	Negative	4	6	0	0	Negative	Syphilis Wassermann
17	13	Wife	C N S asymp		Infected 5 mos before wife whose sp p was found routinely positive	Recurrent secondary rash no neurologic signs	4	2	0	0	Negative	Syphilis secondary recurrent
28	2	Husband	C N S asymp	4 mos	Developed secondary syphilis concurrently with husband maculopapular rash palmar syphilide	Neurologic examination negative	4	0	0	0	Negative	Syphilis secondary early
12	1	Husband	Secondary neurorecurrence left neuroretinitis bilateral VIII vestibular	15 mos	None of early syphilis	Right facial paralysis duration 1 week	4	18	++	4	Syphilitic zone	Meningeal neurosyphilis
27	20	Husband	C N S meningeal	24	Shortly after marriage sore throat bone pains malaise lasting 6 mos	Pupils irregular sluggish reflexes exaggerated	0	3	0	0	Negative	Nonsyphilitic ?
45	6	Husband	C N S meningeal	?	Five years after marriage secondary syphilis	Negative except for signs of secondary syphilis	4	2	0	0	Negative	Syphilis secondary early
51	12	Husband	C N S meningeal	5	Negative has had a syphilitic child	Negative	1	0	0	0	Negative	Syphilis latent
52	6 mos	Wife	C N S asymp	?	Four months ago primary followed by secondaries	Lesions of secondary syphilis no neurologic signs	4	16	+	0	Syphilitic zone	Syphilis secondary early (asymptomatic neurosyphilis)

appeared in the secondarily infected partners only twice In this series, the figures are as follows Of sixteen marital partners infected by paretic spouses, a history of the lesions of early syphilis or of gummatous lesions was obtained six times (37 5 per cent), of six partners of tabetics, once only (16 6 per cent), of the twenty-two partners of these combined groups of parenchymatous neurosyphilis, in 31 8 per cent On the other hand, twelve of the eighteen syphilitic partners (66 6 per cent) of the group of cerebrospinal syphilitics gave a definite history of early lesions of syphilis

TABLE 4—TYPES OF CONJUGAL NEUROSYPHILIS OBSERVED

Neurosyphilitic Disease in Syphilifer	Family Number*	Partner	Type of Neurosyphilis in Partner
General paresis	13	Wife	General paresis
		Mistress	Cerebrospinal syphilis N III palsy
	18	Wife	Asymptomatic (positive C S F only)
	25	Wife	Asymptomatic (positive C S F only)
	30	Wife	Asymptomatic (positive C S F only)
	34	Wife	Cerebrospinal syphilis unclassed (only neurologic manifestation anisocoria positive C S F)
	40	Wife	General paresis
	43	Husband	Tabes
	46	Wife	General paresis
	48	Wife	Vascular neurosyphilis
Tabes	7	Wife	Vascular neurosyphilis
	15	Husband	Tabes
	32	Wife	Asymptomatic (positive C S F only)
	38	Wife	Tabes
Vascular	29	Wife	General paresis
Unclassed	14	Wife	Asymptomatic (positive C S F only)
Unclassed	37	Wife	Unclassed (positive physical findings C S F negative)
Unclassed	39	Wife	Asymptomatic (positive C S F only)
Meningeal (neuro recurrence)	12	Wife	Meningeal (N VII palsy)
Asymptomatic	52	Husband	Asymptomatic (positive C S F only)

* Compare Tables 1 2 and 3

COMPARISON OF DATA WITH THOSE OF OTHER WORKERS

The only reports which lend themselves readily to a detailed comparison with our material are those of Plaut and Goring[5] (all paretics), Schacherl,[6] Raven[7] and Seelert[9] (paretics and tabetics) The results of such a comparison are shown in Table 6 It is often difficult properly to classify the cases reported by these authors Several of them have included as definitely neurosyphilitic partners who show, for example, only sluggish pupils or sluggish reflexes with an otherwise negative physical examination, negative history and negative blood Wassermann test The interpretation of such ambiguous abnormalities depends, in our opinion, too much on the personal equation of the investigators for scientific accuracy We have nevertheless classified such cases as "probable neurosyphilis" The twenty-one cases of neurosyphilis in marital partners which we report are largely free from this criticism, since in nineteen of them the spinal fluid findings were positive In general, there is a fairly close agreement between the percentages of the various workers named and those obtained in this study Only the percentages for the whole class of neurosyphilitics are sufficiently large to permit definite conclusions They show that from 60 per cent (Plaut and Goring) to 76 9 per cent (this study) of the partners of neurosyphilitic patients are syphilitic, that from 18 per cent (Plaut and Goring) to 40 3 per cent (this study) of the total number of partners are neurosyphilitic, and that from 30 per cent (Plaut and Goring) to 52 5 per cent (this study) of the syphilitic partners are neurosyphilitic The higher figures which we have obtained, are, of course, due to the use of spinal fluid examinations as a routine part of the investigation

COMMENT

The incidence of neurosyphilis in an unselected class of untreated or badly treated syphilitic patients is probably between 25 per cent (Mattauschek and Pilcz,[12] from clinical observations) and 35 7 per cent (Wile and Marshall,[13] based on 1,869 spinal punctures on patients in all stages of syphilis, including 349 neurosyphilitics) In a large number of syphilitics without definite neurologic involvement, subjected to an amount of treatment known to be insufficient to cure, it was found to be from 12 to 16 per cent[14] Of the forty partners of this study demonstrated to have syphilis, fifteen had had one or more courses of treatment before spinal puncture was performed, so that the expectation of neurosyphilis in this group of patients might fairly be put somewhere between 15 and 35 7 per cent Actually however, 52 5 per cent were neurosyphilitic This may be considered as evidence in favor of a special strain of infecting organism with a predilection for invasion of nervous tissue Complicating factors arise, however when these patients are divided into the two groups of partners of parenchymatous neurosyphilitics (tabes and paresis) and those married to neurosyphilitics of the cerebrospinal (meningovascular) type Of twenty-two syphilitic partners of the first group, fifteen, or 67 2 per cent , had neurosyphilis This incidence seems far too high to be coincidental, but of eighteen partners of the second group, only six, or 33 3 per cent , were neurosyphilitic, which is not materially greater than the expected incidence of neurosyphilis in any group As we have already pointed out, furthermore, the duration of marriage and of syphilis in the syphilifer is about twice as long in the combined groups of parenchymatous neurosyphilis as in the group of cerebrospinal syphilis An attempt to employ this fact to explain the discrepancy of neurosyphilis in the partners in the two groups conflicts with our present day theories regarding the genesis of neurosyphilis So far as we now know the central nervous system is invaded early in the course of the disease, probably at the time of the first period of generalization,[1] and, except under unusual circumstances, not at any other time[16] It is therefore not permissible to argue that if the nervous

TABLE 5—DURATION OF SYPHILIS IN ORIGINALLY INFECTED PARTNER IN RELATION TO TIME OF MARRIAGE AND STATUS OF HEALTH OF WIFE OR HUSBAND

Duration of Syphilis in Syphilifer	Total	Status of Wife or Husband: Neurosyphilitic	Syphilis but No Apparent CNS Involvement	Non syphilitic	Per Cent of Total Partners Syphilitic
More than 10 years before marriage	2	1		1	50 0
From 5 to 10 years before	3		1	2	33 3
From 1 to 5 years before	16	5	6	5	68 7
Year of marriage	2	1	1		100
After marriage	11	4	6	1	90 9
Duration unknown	16	8	6	2	87 5

12 Mattauschek and Pilcz Zweite Mitteilung uber 4 134 katamnestisch verfolgte Falle von luetischer Infektion Ztschr f d ges Neurol u Psychiat **15** 608 1913

13 Wile U J and Marshall C H A Study of the Spinal Fluid in One Thousand Eight Hundred and Sixty Nine Cases of Syphilis in All Stages Arch Dermat & Syph **3** 272 (March) 1921

14 Moore J E The Cerebrospinal Fluid in Treated Syphilis J A M A **76** 769 (March 19) 1921

15 Fordyce J A The Importance of Recognizing and Treating Neurosyphilis in the Early Period of the Infection Am J M Sc **161** 313 (March) 1921

16 Moore J E The Genesis of Neurosyphilis Arch Derm & Syph to be published

system has not been invaded by the ninth year after marriage, invasion may yet take place before the sixteenth year, and thus bring the incidence of conjugal neurosyphilis in the group of meningovascular syphilitics equal to that of the parenchymatous group

A further essential point in the argument of the supporters of the neurotropic strain theory lies in the comparative infrequency of symptoms of early syphilis in patients with neurosyphilis and, especially, parenchymatous neurosyphilis This infrequency is well illustrated in the present series in the syphilitic partners of tabetics and paretics, but two thirds of the partners of cerebrospinal syphilitics had passed through the usual course of early syphilis

It is hardly conceivable that neurosyphilis of the parenchymatous type may be due to a strain of *Spirochaeta pallida* which involves nervous tissue mainly, while the more diffuse meningovascular neurosyphilis is due to a different strain, which also freely invades other organs, particularly the skin Although the evidence offered by this paper seems to point in that direction, we prefer to consider the question as yet unsettled from the clinical standpoint, and to await the results of the examination of a much larger series of patients than the present

If the scientific value of this material, so far as it permits a division of the organism of syphilis into distinct strains, is inconclusive, the practical value of the work is nevertheless obvious The slogan introduced by Solomon, "The family of a paretic is the family of a syphilitic," receives ample support It is as much the duty of every physician who deals with neurosyphilis to investigate the families of his patients as it is that of the physician who treats early syphilis Furthermore, the seven spouses in this series with asymptomatic neurosyphilis demonstrate that such an investigation must be complete Unless it includes anamnesis, physical and neurologic examination, and the usual laboratory tests of the blood and spinal fluid, it is inadequate

2 Of the twenty-two partners of twenty-one paretics, sixteen, or 72 7 per cent, had syphilis Of these syphilitics, eleven, or 68 7 per cent, were neurosyphilitic

3 Six of the eight partners of tabetics had syphilis, and four of these had neurosyphilis

4 In the group of meningovascular neurosyphilitics eighteen, or 81 8 per cent of twenty-two partners, had syphilis, but of these, only six (33 3 per cent) were neurosyphilitic

5 Of the whole number of fifty-two partners, forty, or 76 7 per cent, were syphilitic, and of these, twenty-one, or 52 5 per cent, had neurosyphilis

6 Conjugal neurosyphilis was observed in twenty-one instances The type was similar in both partners eight times In seven instances, neurosyphilis was asymptomatic in the marital partner, and was detected only by routine examination of the cerebrospinal fluid

7 The duration of marriage, and of syphilis in the syphilifer, was about twice as long in the group of parenchymatous (paresis and tabes) neurosyphilis families as in the group of meningovascular syphilis The danger of infection for the partner increases as the date of infection in the syphilifer approaches the date of marriage

8 In two thirds of the syphilitic partners of parenchymatous neurosyphilitics, the course of syphilis had been latent Only one third of the partners of meningovascular neurosyphilitics showed this latency

9 The higher percentages of conjugal neurosyphilis which we have obtained, as compared with those of other investigators, are due to the routine use of spinal fluid examinations

10 Though the high incidence of conjugal neurosyphilis in the partners of parenchymatous neurosyphilitics points to the existence of a special neurotropic strain of *Spirochaeta pallida*, the comparatively low percentage found in the partners of cerebrospinal neurosyphilitics introduces a complicating factor From the available material, a definite decision as to duality of strain cannot be reached

TABLE 6—COMPARISON OF RESULTS OBTAINED IN THIS STUDY WITH THOSE OF OTHER INVESTIGATIONS

			Status of Health of Partners										
					Syphilis Without C N S Involvement†								
Author	Families	Partners Investigated	Neurosyphilis Certain	Neurosyphilis Probable*	Total Neurosyphilis No	Total Neurosyphilis Per Cent	No	Per Cent	Total Syphilis No	Total Syphilis Per Cent	Normal No	Normal Per Cent	Per Cent of Syphilitics with Neurosyphilis
Paresis													
Plaut and Goring	54	50	1	8	9	18 0	21	42 0	30	60 0	20	40 0	30 0
Schacherl	24	24	5	5	10	41 6	5	20 8	15	62 5	9	37 5	66 6
Raven	37	37	4	8	12	32 4	18	48 6	30	81 0	7	18 9	40 0
Seelert	30	30	4	1	5	16 6	10	33 3	15	50 0	15	50 0	33 3
Moore	21	22	10	1	11	50 0	5	22 7	16	72 7	6	27 2	68 7
Tabes													
Schacherl	26	26		7	7	26 9	10	38 4	17	65 3	9	34 6	41 1
Raven	23	23	3	4	7	30 4	7	30 4	14	60 8	9	39 2	50 0
Seelert	9	9	3		3	33 3	3	33 3	6	3 3	3	33 3	50 0
Moore	8	8	4		4	50 0	2	25 0	6	75 0	2	25 0	75 0
Cerebrospinal syphilis													
Schacherl	15	15	1	3	4	26 6	11	73 3	15	100 0			26 6
Raven	12	12		4	4	33 3	5	46 6	9	75 0	3	25 0	44 4
Moore	21	22	5	1	6	27 2	12	54 5	18	81 8	4	18 2	33 3
Total													
Plaut and Goring	54	50	1	8	9	18 0	21		30	60 0	20	40 0	30 0
Schacherl	65	65	6	16	22	33 8	25		47	72 3	18	27 7	46 7
Raven	72	72	7	16	23	31 9	29		52	72.2	20	27 8	44 2
Seelert	39	39	7	1	8	20.5	13		21	53 8	18	46 1	38 09
Moore.	50	52	19	2	21	40 3	19		40	76 9	12	23 1	52 5

* Included under this head are some cases in which the diagnosis rests on a single neurologic abnormality only such as sluggish reflexes In those cases reported by the various German authors the spinal fluid was not examined In the two cases of this series included it was negative

† In this group are all cases classed by the German investigators as syphilitic because of a positive blood Wassermann test or in women because of a syphilitic child frequent abortions or stillbirths or numerous children who died in infancy In this series a diagnosis of syphilis has been considered permissible only if the blood Wassermann test is positive If lesions of syphilis were present or an unmistakable history obtained or if a woman had borne a syphilitic child

SUMMARY

1 Routine examination was made of the fifty-two marital partners of fifty neurosyphilitic patients

11 Routine examination of the partners of neurosyphilitics is of practical value That spinal fluid examination is an indispensable part of the routine is indicated by the discovery of asymptomatic neurosyphilis in seven partners

330 North Charles Street

ABSTRACT OF DISCUSSION

DR HARRY C SOLOMON Boston I have been greatly interested in the high percentage of syphilis in mates We have published the results of examinations in 555 families of syphilitic patients which were divided between the paretic or parenchymatous group—the cerebrospinal syphilis group—and the group in which the central nervous system is not involved We gave the figures from a Wassermann survey, using the Wassermann reaction with the idea that while it would probably show a less number of positive cases than if we took in all the factors mentioned by the authors for making the diagnosis of syphilis, yet it was standard and there would be less chance of the individual equation of the examiner interfering with the results We found that the positivity of the Wassermann test in the mate varied between 25 and 33 per cent As far as the central and the noncentral nervous system groups are concerned there is very little difference in our group The incidence of positive Wassermann reactions was about the same in the two groups Another striking fact is the frequency in which the spinal fluid was positive in the cases reported today We did not examine the spinal fluid in the mate as a routine procedure However, the positive fluids were less than 10 per cent They were selected to a certain extent because they all had positive Wassermann reactions and there was reason to suspect involvement of the central nervous system This discrepancy is striking It is interesting to know that 25 per cent of the mates of the syphilitics had no conception that they had syphilis The same thing was true of the children in these families The average age at which the diagnosis was made in children who showed symptoms of congenital syphilis was between 8 and 12 years That is important from the diagnostic standpoint As to the strains of spirochetes The authors were conservative If we consider the necropsy findings, there is reason for being more conservative In the vast majority of cases of general paresis disease of the aorta is present There is evidence that these patients have had more than a central nervous system lesion There may be a predilection of these strains for the central nervous system but there is also a predilection for he vascular system so that it cannot be said to be a pure nervous system strain

DR JOHN H STOKES, Rochester, Minn The authors are to be congratulated for their conservatism and because they have subscribed to the validity of the clinical investigation in attacking these questions What we found out about patients was told us before the laboratory man worked out the case Certain general principles underlie investigations of this type There are multiple agencies The first is the strain of the infecting agent The second is the duration of the infection The picture might be entirely different when the husband infected the wife five years after his own infection and a comparison of the two situations might have no validity whatever The third point is the soil on which the organism is implanted One man's meat is another man's poison, and one man's spirochete is his death, whereas the same organism only quickens the other man's wits and improves his outlook on life, so to speak The fourth factor is treatment At Rochester we are studying pairs husbands and wives in which we found that the strain of the organism is the same—that the husband was responsible for the infection of the wife or the reverse, and that the duration of the disease is the same We are also trying to compare the factor of treatment and the individual factor, as to the man and the woman There seems to be a distinct tendency for the man to develop neurosyphilis as distinct from the woman The woman has many protective factors in her life which do not enter into the life of the man One sees in many pairs that one the woman, has a severe cardiovascular syphilis, while the man has an extreme neurosyphilis and only the faintest signs of myocardial involvement A revision of our knowledge of syphilis must be made in the light of the cerebrospinal manifestations We must revise our ideas of the disease, and its detection by the spinal fluid examination easily places that examination on a par with the Wassermann test, certainly in late cases, even if it does not rank above it The multiple involvements should be searched for in these patients The mere fact that one patient has neurosyphilis and another has not is not after all, so important for the patient to know, but the other patient may have the beginnings of an aneurysm which may cloud his future just as distinctly as does the other patient's paresis

DR WADE H BROWN, New York Some differences of opinion may be expressed as to whether there are two strains or one strain The strongest evidence for strains is clinical evidence Some laboratory work tends to confirm a dualistic strain theory The clinical evidence is just as strong for one as for the other of these theories I wish to emphasize the necessity for great caution We know entirely too little of the possibilities of what any strain may do in an experimental animal either at the time of isolation or subsequently The great difficulty which has arisen from laboratory studies is due to the fact that these comparisons have been made for the most part under wholly incomparable conditions—freshly isolated strains compared with strains carried for a number of years The only proper way is to study strains isolated at practically the same time from the same source and carried under the same conditions and then vary the conditions There is a demand for careful epidemiologic studies and careful laboratory investigations We need facts a great many more facts than we possess, before we are ready to commit ourselves to any opinion as to what the causative organism is in this disease as to strain

PRINCIPLES UNDERLYING THE TREATMENT OF HEART DISEASE BY EXERCISE*

THEODORE B BARRINGER, JR, M D
NEW YORK

For many years the idea has prevailed, and still prevails, that the chief cause of heart failure in patients suffering from chronic cardiac disease is physical overstrain This firmly rooted belief has dominated our methods of treating heart disease, with the result that exercise has been almost completely banished as a therapeutic measure Only recently has it come into comparative prominence and, although many physicians can testify to its efficacy, the principles guiding its use are as yet mainly empiric, and much uncertainty exists about the whole matter

We have considerable evidence which tends to controvert this long-held mechanical theory of the cause of heart failure I recently investigated the clinical records of a series of 154 cases of heart failure complicating chronic valve or muscle disease[1] In but three cases was there a definite history of physical strain immediately preceding the onset of symptoms A large proportion of the remaining 151 cases showed fever over varying periods Sixty-nine patients showed an increase above normal of the polymorphonuclear leukocytes (blood counts were done in 134 cases) The results of the survey pointed strongly to infection in the heart itself as the cause of heart failure We found a certain group of patients, generally with a history of

* From the Cardiac Clinic of the New York Hospital
* Read before the Section on Practice of Medicine at the Seventy Second Annual Session of the American Medical Association Boston June 1921

1 Barringer T B Jr The Etiology of Heart Failure J A M A 76 1143 (April 23) 1921

syphilis, who suffered from acute or chronic heart failure following an attack of angina, occasionally initiated by physical exertion It was probably this group which did much to establish the old theory of the mechanical cause of heart failure

The newer circulatory physiology teaches that a normal heart always dilates during exercise, for only in this way can it increase largely its output A damaged heart acts in the same way, only more rapidly and extensively and in response to a smaller amount of exercise It is improbable that the dilatation accompanying a brief period of exercise, even if marked, could so damage the contractile power of the heart muscle fibers that the temporary dilatation would become persistent and heart failure result Only if the exercise causing the dilation continued would heart failure ensue, but the patient's sensations would warn him long before this We frequently see damaged hearts overtaxed by physical exercise, but only rarely do the symptoms persist more than a few minutes after the exercise has ceased

Certainly the fear of overtaxing the heart in heart disease by physical strain and thereby producing heart failure was closely connected with the old theory of the cause of heart failure and is not justified by our present knowledge of circulatory physiology or by our present conception of the dominant role which infection plays in the production of heart failure

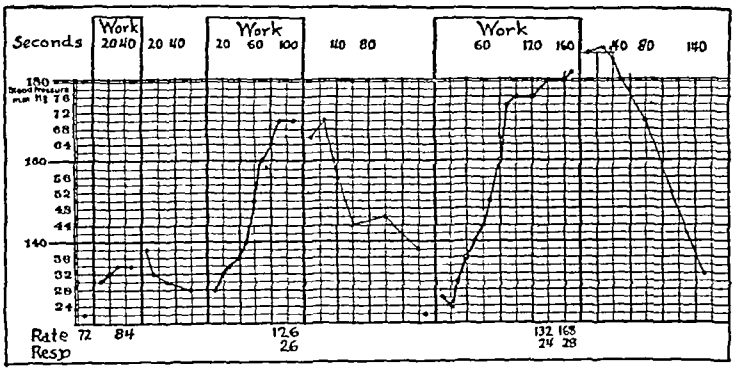

Chart 1 —Curve of systolic blood pressure during and after work in a normal person aged 50 in poor physical training Spaces between heavy perpendicular lines represent working periods Work furnished by flexing alternately thighs on abdomen at rate of 90 per minute Normal reactions

CIRCULATORY PHYSIOLOGY OF EXERCISE [2]

The circulatory physiology of exercise will be discussed briefly, for a knowledge of this is essential to an intelligent use of exercise in heart disease Only recently have we learned how intensely exercise affects the heart and arteries, and of the great margin of safety existing in a normal cardiovascular apparatus During physical work the heart increases its output per minute either by a larger output per beat or by an increased rate or by both This increase may be as much as four times the normal during heavy work The splanchnic vessels are constricted, and this in conjunction with the increased output of the heart, raises the blood pressure The rise of blood pressure is perhaps the most striking and important of the phenomena accompanying exercise It is the chief factor in maintaining or increasing the coronary blood flow whereby the heart muscle is supplied with sufficient oxygen to perform its increased work During vigorous exercise the blood flow through these vessels may be increased to six times the normal The flooding of the heart muscle with blood, which accompanies every kind of exercise, must have a marked effect on its nutrition, provided it is not overfatigued by the exercise Improvement in the nutrition of the heart muscle fibers increases their contractile power, which is the main reason for the increase in cardiac reserve power which properly graded exercise will cause in normal people and in patients with heart disease

Increased blood pressure plays such an essential part in the effect produced by exercise on the heart that further clinical investigation along this line seemed desirable During the past year I have carried out a number of experiments on normal persons and patients with heart disease to determine the course of the systolic blood pressure both *during* and *after* work The only exercise requiring no apparatus which would permit the blood pressure to be taken while the exercise was proceeding was the following

The patient stood still with one extended arm resting on a support not quite as high as the shoulder The pressure was read by auscultation, and then the patient flexed the thighs alternately on the abdomen at the rate of from 60 to 90 per minute, holding as quiet as possible the arm from which the pressure was read The pressure was read at frequent intervals during the work Naturally the amount and rate of work varied considerably

CIRCULATORY REACTIONS DURING AND AFTER EXERCISE IN A NORMAL PERSON

The experiment depicted in Chart 1 represents a quite typical one selected from a number of others During work the blood pressure rose and reached its highest figure toward the end of the longest working period (greatest amount of work accomplished) The pressure after work, as a rule, was higher than that reached during work No one of the experiments showed abnormal blood pressure curves subsequent to work (delayed rise or prolonged fall [3]) In some experiments the work continued as long as five minutes at top rate of speed (90 flexions per minute)

These reactions may be interpreted as follows The rise during work was caused by an increased heart output per minute and constriction of the splanchnic vessels The heart muscle was stimulated to contract more energetically, which increased each systolic discharge and played an important part in producing the increased minute output of the heart The blood flow through the coronary vessels was increased markedly, which not only enabled the heart to do its additional work but improved the nutrition of its muscle fibers

CIRCULATORY REACTIONS DURING AND AFTER EXERCISE IN PERSONS WITH HEART DISEASE

In patients with large cardiac reserve powers there was no difference from the reactions described in normal persons

Patients with small reserve power showed several differences They were able to work for shorter periods of time, which increased as they improved In the

2 Bainbridge F A The Physiology of Muscular Exercise London 1919 This excellent monograph is the authority for many of the statements about circulatory physiology in this paper

3 Barringer T B Jr The Circulatory Reaction to Graduated Work Am J M Sc 155 864 (June) 1918

majority of cases the pressure rose *during* work, reaching its highest point toward the end of the longest working periods Occasionally the longest periods of work were accompanied by lower blood pressures (Chart 4) The pressure *after* work was as a rule, higher than that during work and reached the highest point after the longest working period There were a few exceptions to this Abnormal curves of blood pressure (delayed rise and prolonged fall) were present in the majority of cases when the heart was overtaxed Also on several occasions a marked pulsus alternans occurred The heart showed a greater increase in rate earlier in the working period than did the normal person's These patients with limited cardiac reserve powers showed the same circulatory reactions to exercise that normal persons did up to the point where the heart became overtaxed

In patients with cardiac failure and little or no reserve power the pressure rose during work, at times excessively This was caused probably by an exaggerated activity of the vasomotor center The pressure subsequent to work showed abnormal curves The experiments in this class of patients are described at length elsewhere [4]

increases the output per beat and at the same time richly supplies the muscle with blood and to avoid any degree and duration of exercise which would fatigue the heart and interfere with its nutrition It is hardly probable that prescribed exercise would be so strenuous and long continued as to produce heart failure, nevertheless the fatigue and interference with nutrition which is caused when the optimum of exercise is exceeded, even for a brief period, must make the heart muscle more susceptible to reinfection

We have a number of indications which enable us to determine whether a given exercise has overtaxed the heart and produced the undesirable results discussed above The appearance of the face, the patient's sensations, the rate of respiration, the time it takes the pulse rate to return to normal, and the type of systolic blood pressure curve subsequent to work, all are of value I have found the form of systolic blood pressure curve to be the most reliable [3] Also, we are less liable to exceed the limit of safety if the early exercises given to a heart patient after a breakdown are of short duration

The height of the blood pressure curve subsequent to exercise gives us an indication as to the effect of a given exercise on the heart in the majority of patients A rise

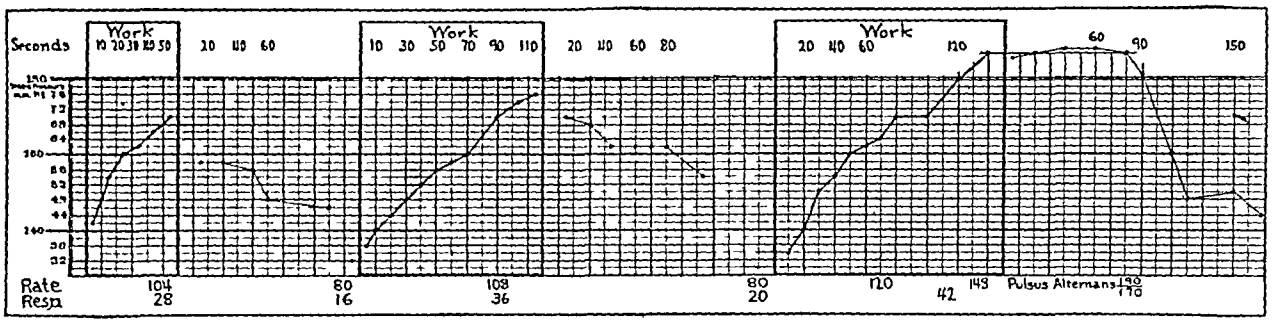

Chart 2.—Curve of systolic blood pressure during and after work in a patient C aged 51 suffering from valvular disease (aortic regurgitation) with small cardiac reserve power Spaces between the heavy perpendicular lines represent working periods Work furnished by flexing alternately thighs on abdomen at rate of 80 per minute The first two periods of work did not overtax the patient's heart The third period of work for 150 seconds did overtax the heart Blood pressure curve after work abnormal and pulsus alternans developed

DEDUCTIONS FROM PRECEDING EXPERIMENTS

To decide accurately what is going on in the circulatory system at each instant of one of these experiments is difficult, even impossible We know that a heart with diseased or poorly nourished muscle is able to increase its output per minute in response to the call of exercise, mainly by an accelerated rate and to a lesser degree by an increase in its output per beat [5] An increased output per beat means a more energetic contraction of the muscle and, *pari passu*, an increased blood supply to the muscle If the heart is not able to increase its output per beat, the only way in which it can propel more blood to the working muscles is by increasing its rate As the work augments, even the accelerated rate no longer enables the heart to increase its output, and dilatation beyond physiologic limits rapidly ensues This means that the heart muscle becomes fatigued, the coronary circulation is mechanically impeded, the contractile power of the heart muscle fibers is damaged, and ultimately heart failure may ensue

In giving exercise to a damaged heart, the end to be achieved is so to grade the exercise that the heart muscle is stimulated to contract more energetically, which of more than 20 mm of mercury from the preexercise level indicates an energetic and favorable response of the heart to the exercise, *provided there is no indication of overtaxing the heart* A smaller rise is noted with milder exercise, and indicates a less energetic effect on the heart's contraction and nutrition

Occasionally, as the exercise is increased, the subsequent pressure reaches lower and lower levels instead of mounting higher and higher (Chart 4) This is accompanied, however, by evidence of overtaxing the heart, and is followed by abnormal curves of pressure

A small group of patients do not react in the ways described above They show a marked fall in pressure during the first thirty seconds subsequent to work, which may fail to return to the preexercise level even though the work has been vigorous and the heart obviously not overtaxed

EXERCISE FOR HEART PATIENTS

It must be emphasized that no exercises other than sitting up in bed or in a chair should be given to any patient convalescent from an attack of heart failure or recurrent endocarditis until the temperature has been normal for a week Even after ten days of normal temperature, a recurrence of fever and heart symptoms is occasionally seen The early exercise should be of short duration, and each series of movements should not last

4 Barringer T B Jr Am J M Sc to be published
5 Patterson S W and Starling E H On the Mechanical Factors Which Determine the Output of the Ventricles J Physiol 48 357 1914

more than thirty seconds and should be followed by a rest For the first three or four days the exercises should be well within the heart's capacity, and the limit of tolerance should not be approached

Exercise may be divided into two forms, energetic and mild, this classification, as explained above, being based on the amount of increase of the systolic blood pressure subsequent to the exercise The energetic type is the more important for heart patients The question of overtaxing the heart must be carefully decided in this form, although one or two overtaxings have never

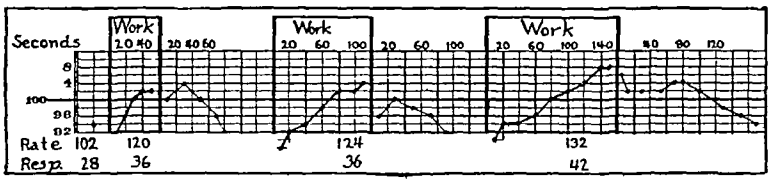

Chart 3.—Curve of systolic blood pressure during and after work in Patient S aged 10 years suffering from valvular heart disease (mitral stenosis and regurgitation) with small cardiac reserve power Vital capacity 76 cubic inches (normal 115) Work furnished by flexing alternately thighs on abdomen at rate of from 60 to 70 per minute The first two periods of work did not overtax the patient's heart The third period of work for 160 seconds did overtax the heart Abnormal blood pressure curve after work

in my experience done any harm This energetic type produces an increase of 20 or more millimeters of mercury after work, and shows a normal curve of systolic pressure subsequent to work The working periods should be of short duration and alternated with periods of rest The exercise should be of such a kind that it can be prescribed in definite amounts and increased or decreased in definite proportions

Exercise with dumb-bells, stair-climbing, skipping rope, running in place, hopping, and all calisthenic exercises in which the body trunk is moved widely are the ordinary forms of energetic exercise useful for heart patients

I have found the most convenient form of energetic exercise to be different movements with dumb-bells varying between 1 pound and 15 pounds in weight Swinging a bell from between the feet in an arc up above the head and repeating without a pause, flexing the forearms alternately, with a bell in each hand, the patient sitting or standing, and pushing two bells alternately above the head are the three most useful movements Each close[6] varies between five and twenty movements After each close the patient rests until blood pressure and pulse return to normal The closes are repeated from five to ten times at each exercise period, which is generally once in twenty-four hours

The mild form of exercise is one which stimulates the heart's activity only moderately over longer periods of time, as shown by the small increase in blood pressure subsequent to the exercise This form should be used for patients with small cardiac reserve power and also to supplement the first more energetic type

Walking is perhaps the best example of the second, milder type of exercise This should be at first on a level The patient should not talk and should not walk against a strong wind A short distance should be covered at a steady gait, and then the patient should rest for two or three minutes, then repeat the walk and rest

Other forms of mild exercise suitable for heart patients are croquet-playing, setting up exercises in which the arms and legs and not the trunk are moved, and "short golf" As the patient's reserve power increases, one of the more energetic types of exercise should be added to the daily regimen

The improvement in the general condition of the heart patient, his lessened liability to general infections, and the increase in his exercise tolerance, are all quite well known results of exercise and sufficient to establish its value as a therapeutic agent There is, however, reason to believe that exercise has another and most important function If the idea which ascribes to infection the chief role in the causation of heart failure is correct, exercise must have a definite preventive value against this most serious complication of heart disease The marked influence on the coronary circulation and the effect on the nutrition and contractility of the heart muscle fibers, which exercise will cause in a normal heart, are important teachings of the newer circulatory physiology We have indicated the similarity of the effects which exercise, properly graded, will cause in a damaged heart The resistance of the heart muscle to infection must certainly be much increased thereby and, in conjunction with the removal of infectious foci elsewhere in the body, may well be the most important preventive measure against heart failure which we possess

ABSTRACT OF DISCUSSION

DR ALEXANDER LAMBERT, New York The author emphasizes that the infections of the body are the ones that poison the heart and not the ordinary and usual exercises that come to men in active or inactive life, that quiescence and freedom from exertion are necessary during the activity of the period of infection, and that the heart after infection should be made to do what work it can I do not believe that it is as yet accepted by the profession that all infections are liable to do injury to the heart muscle The question is how long to keep a patient in bed during an acute disease No matter how he feels, as long as the temperature shows any

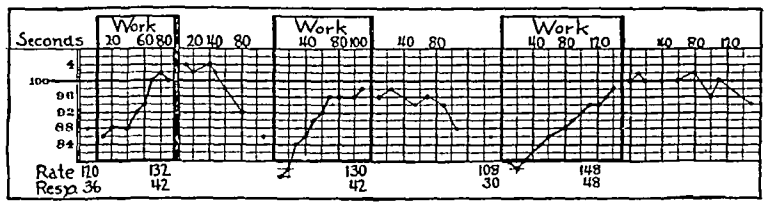

Chart 4.—Experiment on Patient S (compare Chart 3) five days earlier at a time when cardiac reserve power was very small This depicts a less common type of reaction Instead of reaching higher figures during increasing work the blood pressure reached lower figures as a result of the heart's becoming more fatigued and not regaining its initial strength From five to ten minutes elapsed between exercise periods

rise from 99 up to 100 F., it shows a still active process in the heart muscle, and the patient must remain in bed The value of exercise and what it can do for those who are used to it was forcibly shown when I listened to the hearts of six day test bicycle riders I saw them when they had been riding three hours Their hearts were extraordinarily quiet They were only 4 5 or 4 75 cm outside the median line The pulse even when they came off the track, was not higher than 80, one man had a pulse of 76, and most of them were in the sixties The heart sounds were very faint, but the pulses were strong One man had a reduplicated first sound, and another had a reduplicated second sound The value of this thing is in making an organ of the body increase its health by improving its function and insisting that it perform

6 The word close is used to indicate the period during which the patient is continuously exercising Its duration is not measured in time, but by the number of units of exercise it includes

its function better than it has been doing In other words, exercise trains the heart to better and more easy contractions

DR H M FUSSELL, Philadelphia Dr Barringer's paper emphasizes not only that the normal individual should keep up the amount of normal exercise during his life, but also that we can increase the value of the heart beat by proper well supervised exercises in individuals with cardiac disturbance I fear, however that we might be overimpressed with the value of exercise in cardiac disease and not take into consideration the great necessity of continued rest after infection All of us have seen prolonged mild cases of endocarditis converted into severe cases of endocarditis by allowing the patient to take exercise too soon or to get out of bed too soon An individual with this affection must remain quiet in bed for at least ten days or two weeks after the temperature has become normal and the exercise must be taken very tentatively, the patient being observed immediately afterward and even during the exercise of sitting up If there is the slightest rise of temperature or any undue acceleration of the pulse that patient is taking his exercise too soon I am sure that by regulating the exercise at the proper time after the infection we shall save ourselves many severe cardiac affections

DR SAMUEL A LEVINE, Boston Whether infection plays as important a role in the senile heart is a question We must bear in mind that a different problem may play a part in chronic myocardial disease where the valves may be normal It is certain that those patients do very well with rest in bed They do not get sufficient rest in bed, rather than not getting enough exercise It is hard to believe that the few graded exercises which we give an individual will do any more than the exercise he gets when he goes back to the ordinary routine of life Convalescents from rheumatic fever should stay in bed not for ten days or two weeks but for a month Every heart that goes through a rheumatic infection is injured and during that period of a month it is hard to believe that resting the heart in bed is worse than getting them out of bed and starting the patient on graduated exercises

DR ROBERT H BABCOCK, Chicago I want to emphasize the necessity of prolonged rest after an acute infection of the heart, of either the myocardium or the endocardium Most physicians are apt to err on the side of letting the patient up too soon because they think the injury to the heart has ceased when the temperature has become normal for a week or two and partly because it is difficult to get the patients to remain in bed long enough and difficult to get the family to realize the necessity of it Years ago I saw a young man who had involvement of both mitral and aortic leaflets It seemed that the man had no chance to recover Dr Johnson kept that man in bed for nine months with the result that he got perfect compensation lived and married but finally succumbed to a *Streptococcus viridans* endocarditis Exercise is of great value to many damaged hearts Stokes insisted on his aortic regurgitation patients taking exercise for the purpose of developing a good compensatory hypertrophy of the left ventricle It is my habit to tell patients that they can take any form of exercise which does not produce distress either of breathing or of heart action, with one exception—I very rarely allow a patient to do much swimming I had a young man with a perfectly compensated mitral who had been swimming long distances, as far as 5 miles I regard swimming as very dangerous to a man with a damaged heart for the reason that just as soon as cyanosis appears there is capillary paralysis, and when capillary paralysis takes place, the heart muscle is subjected to great strain The expert swimmers who die of cramps die from acute cardiac overstrain as a result of paralysis of the capillaries In any patient with a damaged heart swimming should be allowed only for short distances and for short lengths of time Exercise is of advantage by improving venous circulation and coronary circulation, for proper exercise calls into play those accessory factors which keep up circulation such as improved venous return to the heart in consequence of the deepened respiration and muscular contractions

DR WILLIAM D REID, Boston The question of how long the patient with a rheumatic type of infection is to be kept in bed must not be decided purely on the temperature We must think of the pathology—what has happened to the heart, and judge from that, from the severity of the symptoms present during the febrile attack, and also from the duration of the febrile attack We would naturally keep one patient in bed longer after the temperature has fallen to normal, and in some other case we would feel justified in letting the patient up earlier Certainly a patient in whom the evidence of cardiac involvement is limited to a few days' fever and a questionable murmur can be given some freedom and tried out sooner than one who has had severe symptoms

DR CARROLL E EDSON, Denver I wish to emphasize the need for caution in recommending exercise in heart disease It is essential to discriminate clearly in every case the fundamental nature of the trouble with the heart The amount of exercise allowed or the degree and duration of rest needed will vary greatly according to whether the patient has (1) a myocardium simply poisoned from acute infectious disease (2) a myocardium on a valve involved in an infective endocarditis whose organisms may be long latent but viable, (3) a simple mechanical trouble from healed valvular lesion, (4) a heart whose difficulty in maintaining its function is due only in part to itself but largely to lack of muscular tone in the entire body, thus losing this aid in the peripheral circulation or (5) a senile heart whose problem is wholly one of nutrition from coronary insufficiency Unless we keep these physiologic and pathologic states clearly in mind, our advice will be indiscriminate and our results may be disastrous

DR. J GARDNER SMITH, New York Previous to 1900 I had charge of the physical training in the public schools in New York Also in the Y M C A I examined more than 10 000 men and boys Twenty years later as medical member of a local draft board I examined 2,500 men for war service In spite of the fact that physical training has had a place in the public school education, we found an appalling unfitness of our young men when examined for war service I am much in favor of more careful examination of boys and girls in our schools, preparatory schools and colleges because there is no greater need today than for strong healthy bodies with which to meet the emergencies of life Our young people need carefully directed physical training I realize that there are cases of overtraining but I feel certain that the cases of injury are much more than counterbalanced by the benefit received by the mass of our boys and girls I hope the influence of this paper and discussion will be to stimulate every member of this section to more interest in the physical training of the young, that they be examined properly and graded properly, that overcompetition be avoided but not at the expense of the interest on the part of our scholars which is always increased by competition and the idea of play

DR THEODORE B BARRINGER JR, New York You all have seen heart patients return to the hospital time and time again Apparently we have not made many advances in the preventive treatment of heart failure during the last fifty years The incidence of heart disease seems to be increasing and also the mortality, and I think it is time we scrutinized our methods of treatment and our ideas as to prevention, bearing in mind the great advance in our knowledge of circulatory physiology and cardiac diagnosis My paper dealt exclusively with the principles underlying the treatment of heart disease by exercise There are many points that came up in the discussion that are rather remotely connected with my subject There are some however that I shall answer In regard to the class of patients suitable for exercise treatment patients in whom there is any suspicion of angina, have to be treated very cautiously in the matter of exercise Until we know more about this disease it is best to eliminate all but the mildest calisthenic exercise, and these in only the mildest types Patients who have recovered from a recurrent endocarditis or attack of heart failure are excellent subjects for exercise treatment The time for beginning treatment is determined to a large extent by the severity of the attack After these patients have had normal rectal temperature—not over 99 6 F—for from seven to ten days, I let them sit up in bed for an hour, a few days later for two hours, then

a few days later in a chair, and then walk around the bed Later they walk 50 feet As soon as they do this, their circulatory reactions are determined to see whether the exercise has overtaxed the heart A patient with cardiac failure complicating either muscular disease or valvular disease can be treated somewhat differently Exercise can be begun earlier and increased more rapidly In regard to the age of the patients, younger people undoubtedly do better with exercise and yet in my experience people between 60 and 70, suffering with senile hearts and chronic interstitial myocarditis, are very much more improved by exercise than by keeping in bed or by limiting radically their physical activity Sufficient evidence exists to make it probable that we will lessen the incidence of cardiac failure in our patients if we attend very carefully to the amount of exercise they get and if we remove any foci of infection which may be present in the body

MANAGEMENT OF PLEURAL EFFUSIONS

IN THE COURSE OF THERAPEUTIC PNEUMOTHORAX *

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AND
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Pleural effusions may be expected in a large proportion of cases treated with pneumothorax The exact percentages given vary directly with the length of time the patients remain under observation, and the frequency with which roentgenologic studies are resorted to In our series we encountered effusions in more than 50 per cent of cases Opinions differ as to the effect of these effusions Most early workers in this field considered them as pernicious complications With increasing experience, however, their presence is looked on with less apprehension, in fact, some observers maintain that serous effusions are salutary phenomena, their beneficial effects being due to antibodies they engender and to the more efficient and uniform lung compression they produce But whatever their beneficial effects are due to, there is hardly a doubt that once the acute symptoms have subsided, a definite, if only temporary improvement is noted in most cases, and very few patients are the worse for their experience

It is of great importance, however, to consider the ultimate results of these effusions rather than their immediate salutary effects Many observers are of the opinion that inflations should be discontinued in the presence of the effusions, on the ground that the antibodies they contain and the efficient and uniform pressure they exert on the lung are sufficient to produce satisfactory therapeutic results Others are profuse in their praise of Debove's autoserotherapy to promote the rapid absorption of the pleural exudate

Careful observation of a large number of cases, however, discloses the fact that these effusions are erratic in their behavior In some instances they will accumulate in large quantities, markedly displacing the mediastinum, breaking up adhesions and laying open walled-in foci which may produce pyopneumothorax On the other hand, the fluid may be rapidly absorbed, leaving behind numerous adhesions which ultimately cause obliteration of the pleural cavity The rapid absorption of the exudate and the consequent obliteration of the pleural cavity are even more disastrous in their results than the undue accumulation of the fluid, especially if the obliteration occurs early in the course of the treatment, because the diseased lung reexpands rapidly, its cavities are reopened, and a recrudescence of the disease is inevitable It is evident, therefore, that the expectant form of treatment is not based on sound, scientific principle

No hard and fast rules can be laid down as to the management of these effusions, and success or failure most frequently depends on the care exercised and the judgment used in the management of the individual case Nevertheless, it occurs to us that the indications for treatment can be brought out in a more comprehensive manner by subdividing all cases of effusion into several groups, depending on the quantity, character and behavior of the exudate

1 SMALL FLEETING EFFUSIONS

Group 1 consists of those cases, which, in the course of treatment, without acute symptoms, developed small, fleeting effusions, enough to fill the costophrenic sinus These effusions are of no consequence because they are transitory in character and are promptly absorbed They do not affect the intrapleural pressure and are discovered only on fluoroscopy, with the patient in the erect posture These cases need no special treatment, and the inflations can and should be continued as if no effusions occurred Such cases are not included in the number of pleural effusions of the series herewith recorded, but they occur very frequently if carefully looked for

2 MODERATE SIZE SEROUS EFFUSIONS WITH NO TENDENCY TO UNDUE ACCUMULATION

Group 2 includes cases with a moderate amount of serous fluid, reaching the fifth or fourth rib anteriorly The development of these effusions is ushered in by more or less acute symptoms, such as pyrexia, malaise, pain in the chest and increased cough, lasting approximately from four to seven days After the acute symptoms abate, these patients show considerable improvement and their general condition is usually better than before the development of the effusions In these cases the effusions show no tendency to rapid accumulation, and there is only slight or no displacement of the mediastinum The intrapleural pressure, however, is definitely affected, and the introduction of small amounts of gas will cause a marked rise in tension The indications for treatment in this group of patients are to maintain a satisfactory collapse and to prevent the formation of adhesions and retraction of the pleural cavity Aspiration is rarely necessary because the fluid usually shows a tendency to spontaneous absorption But the patient should be carefully watched roentgenologically and otherwise, and the pneumothorax should be continued with increasing intrapleural tension If the pleural cavity shows a tendency to retraction and the mediastinum is pulled toward the treated side, the intrapleural pressure should be slowly increased to about 30 mm of mercury

In our series we encountered ten cases of this kind Six of the patients, who are treated by continuation of the pneumothorax under increasing intrapleural tension, are doing well They have now been observed from six months to two and a half years, and so

* From the Montefiore Home Country Sanatorium
* Read before the Clinical Section of the National Tuberculosis Association June 15, 1921 New York

far we have been successful in maintaining a satisfactory collapse in all and the fluid has been absorbed in five In the remaining four patients we discontinued the pneumothorax soon after the development of the effusion, trusting that the fluid would prove an efficient means of maintaining the collapse In these cases extensive adhesions and obliteration of the pleural cavity took place and a recrudescence of the disease occurred

3 LARGE RAPIDLY ACCUMULATING SEROUS EFFUSIONS

To Group 3 belong cases in which there develop copious effusions, filling the greater part of or the entire pleural cavity The symptoms at the onset in these cases are similar to those described in Group 2, but in addition there may be considerable distress owing to the pressure of the great volume of fluid and the marked displacement of the mediastinal contents The indications for treatment in this group are to relieve pressure symptoms and maintain the collapse of the lung, as well as to prevent pleural adhesions The fluid should be aspirated and replaced by air, even if the pressure symptoms are not severe, because it is practically impossible to retain control of the pneumothorax in the presence of large volumes of effusion and when this control is lost pleuritic adhesions and obliteration of the pleural cavity will result The aspiration and gas replacement operation should be continued until there is no more tendency to reaccumulation of large amounts of fluid The pneumothorax however, should be continued indefinitely and the intrapleural pressure should be left at about zero so long as the mediastinum is displaced to the opposite side But as soon as there is evidence of displacement of the mediastinum to the affected side and contraction of the pneumothorax cavity is noted, the intrapleural pressure should be gradually increased and many patients will do well when the pressure is permitted to reach from plus 20 to plus 30 mm of mercury

We had eleven cases that can be included in this group Seven of these were treated in the manner just described while in the remaining four the pneumothorax treatment was discontinued on the advent of the effusion Of the seven patients treated, five who have been observed for from one to two and a half years have been discharged with the disease apparently arrested Their pneumothorax is still continued, and in four the fluid has been completely absorbed Two patients did not benefit by this treatment on account of the extension of the lesion on the untreated side, which, in our opinion, had nothing to do with the development of the effusion In the four remaining cases of this group that were not subjected to aspiration and readjustment of the intrapleural pressure obliteration of the pleural cavity and opening up of ulcerating cavities have taken place, causing fatal hemoptysis in two and rapidly progressing lesions in the others

4 STERILE PURULENT EFFUSION—BENIGN EMPYEMA

In Group 4 are included cases in which there develops considerable effusion which promptly becomes turbid or purulent, but in which no tubercle bacilli or any other organisms can be found on direct smears of the fluid The symptoms at the onset may be more severe than those accompanying serous effusions, but after the acute symptoms subside, the patients usually do well

Jacot calls these effusions "benign empyema" In these cases there is a decided tendency to organization of the exudate and obliteration of the pleural cavity The fluid should therefore be aspirated and replaced by air, and the pleural tension should be gradually increased Four of our cases that have been observed from one to three years belong to this group In two, reexpansion of the lower lobe took place in spite of energetic treatment, but we succeeded in keeping the diseased upper lobe collapsed All the four patients are doing well and are working part time In two cases the fluid has completely disappeared, and tubercle bacilli can no longer be found in their sputum

5 TUBERCULOUS PYOPNEUMOTHORAX

To Group 5 belong cases in which a tuberculous empyema develops, usually as a result of laying open a tuberculous focus in the pleural cavity The symptoms at the onset are very severe, and the patients are dangerously ill for months Smears from the pus aspirated show numerous tubercle bacilli, and occasionally a few secondary organisms are detected In these cases as much of the pus as is possible should be aspirated and replaced by air The injection of 2 or 3 cc of saturated alcoholic solution of methylene blue into the pleural cavity through the aspirating needle seems to be of great benefit in the treatment of these cases We are not yet ready, however, to say in what manner the methylene blue acts Two of our patients who have been treated in this manner for more than a year show remarkable improvement They gained considerable weight and strength, their sputums are negative for tubercle bacilli, and they are now able to perform the greater part of the work they used to do before their illness These two cases will be reported in detail elsewhere

6 PYOPNEUMOTHORAX DUE TO MIXED INFECTION

Group 6 includes mixed infections by virulent pyogenic organisms, introduced from without or through a perforation of the lung, or as a part of general infection The prognosis is usually grave, but of late some reports indicate that good results are obtainable with rib resection, followed by irrigation with surgical solution of chlorinated soda (Dakin's solution)

COMMENT

A classification of effusions in the course of therapeutic pneumothorax from the etiologic and pathologic point of view has been described in a comprehensive manner by von Muralt Our aim here is to outline only the general principles that govern the management of the various groups of cases We must emphasize, however, that these are merely general principles and can be applied intelligently only when each individual case is carefully considered and repeatedly subjected to thorough roentgenologic examinations, for it is only then that we can be definitely informed of the accumulation or absorption of the fluid and the position of the mediastinum

The position of the mediastinum is the important guide in the treatment of these effusions A mediastinum markedly displaced to the untreated side indicates that the fluid is accumulating and that the intra-

pleural pressure is higher than the correct treatment of the case demands Aspiration and substitution of air, with a final intrapleural pressure of about zero, is the best method of treatment in such cases On the other hand, when the mediastinum is pulled toward the treated side, it is an indication that a fluid is in the process of absorption and that shrinkage and obliteration of the pleurel cavity is threatened Here creation of high intrapleural pressure is indicated

The technic of aspiration and substitution of air hardly needs to be gone into at the present time Suffice it to say that in order to avoid such symptoms as fainting, nausea and palpitation during the aspiration, it is advisable to perform the aspiration and the inflation simultaneously The needle connected with the Potain aspirator is inserted in the most dependent portion of the chest, and the pneumothorax needle is inserted above the level of the fluid In this way air is introduced while the fluid is being aspirated, thus preventing marked changes in the intrapleural pressure and rapid shifting of the mediastinal organs, which are responsible for untoward symptoms that are especially likely to occur when large amounts of fluid are removed

SUMMARY

1 The immediate effects of serous effusions occurring during pneumothorax treatment are usually beneficial, but ultimately they cause premature reexpansion of the lung and obliteration of the pleural cavity It it therefore unwise to discontinue the treatment and adhere to the dictum of "leave effusions alone"

2 Small, transitory effusions which do not alter the intrapleural pressure require no special attention

3 Moderate effusions which do not displace the mediastinum and do not interfere with the continuation of the pneumothorax need not be aspirated, but the pneumothorax should be continued with increasing intrapleural pressure to prevent obliteration of the pleural cavity

4 Large effusions should always be aspirated and replaced by air and the pressure regulated according to the needs of the individual case

5 Purulent effusions should always be aspirated and replaced by air, not only because of their toxicity, but also on account of their tendency to produce extensive adhesion formation and obliteration of the pleura

Legal Liability for Venereal Disease—Legal liability for the transmitting of venereal disease has been established and upheld by both civil and criminal courts recently, according to a report issued by the United States Public Health Service In Oklahoma a man has been sentenced to five years in the penitentiary for infecting a girl with syphilis In Nebraska the court upheld a physician who warned a hotel keeper that one of his patients, a guest in the hotel had syphilis and had refused treatment and was consequently a menace to public health In North Carolina a woman has been awarded $10,000 damages against her husband for a similar infection, and the supreme court has upheld the judgment The report further states that twenty states have adopted laws forbidding persons with veneral disease to marry New Hampshire, New Jersey, North Carolina, Oregon, Washington and West Virginia have acted through their state legislatures during the past year A similar bill is pending in Florida All of the twenty states, however, do not require medical examination and certification that the applicant is free from venereal disease

ABERRANT VESSELS IN SURGERY OF THE PALATINE AND PHARYNGEAL TONSILS

THE SIGMOID OR TORTUOUS CERVICAL INTERNAL CAROTID ARTERY AND THE VISIBLE PULSATING ARTERIES IN THE WALL OF THE PHARYNX

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The Paris correspondent of THE JOURNAL a few months ago, reported [1] that

> At a recent meeting of the Societe de chirurgie, Dr Sebileau, hospital surgeon and agrege professor of the University of Paris gave a dramatic account of the death of a young girl from fulminant hemorrhage following tonsillectomy, performed by an expert surgeon Aside from its dramatic features, this observation is instructive, for the case was taken to court a judicial necropsy was held, and a large tear was discovered in the internal carotid artery The surgeon against whom the charge was brought had performed more than 500 tonsillectomies without the slightest accident

The correspondent also referred to the "celebrated surgeon Pean" in connection with the internal carotid artery and hemorrhage following tonsillectomy

Experience has shown that tonsillectomy is relatively a safe procedure at the hands of the trained operator The mortality from hemorrhage is almost nil in the well-appointed and well-regulated clinic Few real specialists have had such disasters as death from hemorrhage following tonsillectomy Not that they had no troublesome and at times alarming hemorrhage to contend with, but modern methods and procedures and real training have proved life savers in such emergencies Obviously, tonsillectomy is not a work for the novice, an intimate knowledge of the anatomy involved, together with technical training and experience, is vital Lack of such knowledge and experience often brings disaster Even the trained operator may at times become negligent in not exercising reasonable care and making special study of each case

The foregoing report of Dr Sebileau brings to my mind three cases of sudden and excessive hemorrhage during tonsillectomy, all resulting in death One of the patients was a woman in whom the operation was performed by a well known specialist, the second, a girl, the operation being performed by an occasional operator, and the third, a girl, the operation being performed by a would-be surgeon and one certainly not versed in tonsil work

These cases, together with the report of Dr Sebileau, prompt me to direct particular attention to the occasional marked sigmoid tortuosity of the cervical segment of the internal carotid artery, whereby the vessel is forced into intimate topographic relationship with the palatine or faucial tonsil, the usual distance of 2 5 cm between the tonsil and the artery being obliterated

The sigmoid or tortuous internal carotid artery is not unknown, as is attested by a review of the literature However, my belief is that the condition is not generally known or appreciated by those operating on the tonsil The importance clinically of the tortuous internal carotid artery cannot be overstated, since the

1 The Carotid Arteries and Hemorrhages of the Tonsils Paris Letter, J A M A 76 532 (Feb 19) 1921

anomalous state of the vessel is unquestionably the underlying factor in many cases of visible pulsation of pharyngeal vessels and probably of fulminant hemorrhage during or following tonsillectomy Doubtless, other arteries likewise are factors A brief reference, therefore, to some observations on arterial conformations about the faucial tonsil, e g, some of the large extrinsic vessels, may lead even to greater study and caution by the trained operator in individual cases, and the abandonment of the faucial field by the novice and the occasional operator as one fraught with too great hazards I, however fancy that the latter is too much to expect and that fools will continue to rush in where angels fear to tread

NORMAL ANATOMY

Under normal conditions the internal carotid artery should not be injured in operative procedures on the palatine tonsil if reasonable care is exercised since the vessel is sufficiently remote from the tonsillar field The same may be said of the external carotid However, other arteries of goodly size, mentioned below, do under normal conditions come into more or less intimate topographic relationship with the palatine or faucial tonsil, and annoying hemorrhage following tonsillectomy from them would seem more probable

The internal carotid artery normally is one of the terminal branches of the common carotid, arising at a level with the upper border of the thyroid cartilage In the cervical portion of its course, the internal carotid first lies lateral to the external carotid but as it courses toward the cranium it comes to occupy a position dorsal and then medial to the external carotid Here the styloglossus and the stylopharyngeus muscles, the stylohyoid ligament, the glossopharyngeal nerve and the pharyngeal branch of the vagus nerve separate the two vessels The internal carotid artery usually passes almost vertically up the neck to its immergence into the carotid canal Dorsally, the cervical segment of the internal carotid rests on the prevertebral fascia which covers the longus capitis muscle, medially, about 2 5 cm away is the superior constrictor muscle separating the artery from the palatine tonsil, and laterally, is the internal jugular vein, the vagus nerve, etc

The tonsillar branch of the external maxillary (facial) artery ascends to the region of the tonsil upon the superior constrictor muscle between the styloglossus and the internal pterygoid muscles, the ascending palatine branch of the external maxillary courses between the styloglossus and the stylopharyngeus muscles, the ascending pharyngeal artery from the external carotid ascends in the region of the palatine tonsil between the styloglossus and the stylopharyngeus muscles laterally and the superior constrictor muscle medially These arteries are located variously lateral to the superior constrictor muscle and are more or less intimately related to the palatine tonsil, depending somewhat on the plane They must always be thought of in connection with operative procedures in the region Moreover, the upward bend or frequent marked redundancy and tortuosity of the cervical portion of the external maxillary artery and the lingual artery lie dangerously near the pharyngeal tonsillar wall at the lower pole of the tonsil Indeed, a high curving of the superior thyroid artery is at times related to the inferior pole of a large palatine tonsil This is particularly true in high division of common carotid As stated above, the internal carotid artery under normal conditions lies fully 2 5 cm away from the superior constrictor muscle and the palatine tonsil, e g, lateral and dorsal to the latter

In brief, one may say that the lateral or attached surface of the palatine tonsil is covered by a thin, firm, fibrous capsule which is continuous with the pharyngeal aponeurosis Immediately ectal to the latter is the thin superior constrictor muscle of the pharynx with the thin buccopharyngeal fascia on its lateral surface The ascending pharyngeal and the ascending palatine arteries and the tonsillar branch of the external maxillary in order from behind forward, are in intimate relationship with the structures forming the tonsillar fossa The tonsillar branch of the dorsalis linguae artery approaches the tonsillar region from below, while the descending palatine artery approaches it from above

The peritonsillar and the pharyngeal venous plexuses likewise are related to the ectal or outer surface of the buccopharyngeal fascia and the superior constrictor muscle and with the arteries would be endangered during tonsillectomy by accidentally biting through the constrictor and other muscles entering into the formation of the tonsillar fossa

Both the external and internal carotids are separated from the tonsillar bed by a considerable space, from 2 5 to 3 5 cm Not infrequently the lingual and external maxillary arteries course near the lower pole of the faucial tonsil and are in danger's way in careless tonsil surgery Moreover, the superior constrictor is, at times, very thin, indeed almost wanting, so that in essence the tonsillar capsule and the pharyngeal aponeurosis alone intervene between the attached surface of the tonsil and certain of the arteries and venous plexuses referred to

The intrinsic blood supply of the palatine tonsil does not particularly concern us in this connection Suffice it to say that Davis[2] believes branches from the ascending pharyngeal, the so-called tonsillar branch from the facial and the tonsillar branch from the dorsal lingual together supply the tissues entering into the formation of the tonsillar fossa while the ascending palatine and the descending palatine arteries form an anastomotic network superolateral to the tonsillar fossa from which the true tonsillar artery goes forth, pierces the tissues of the fossa, and enters the tonsil at its upper outer aspect, to become the real intrinsic supply of the organ Fetterolf,[3] on the other hand, holds that all of the arteries mentioned participate in the intrinsic supply of the palatine tonsil anterior tonsillar (from dorsal lingual), posterior tonsillar (from ascending pharyngeal), superior tonsillar (from descending palatine) inferior tonsillar (anterior from dorsal lingual and posterior from tonsillar branch of the external maxillary)

A considerable venous plexus of veins which receives the intrinsic tonsillar veins forms around the capsule of the palatine tonsil and empties into the lingual vein and the pharyngeal plexus

ARTERIAL VARIATIONS

Normally the cervical portion of the internal carotid gives off no branches Occasionally, however, the occipital, the lingual and the ascending pharyngeal arteries variously arise from it Again, the internal carotid may arise directly from the arch of the aorta

2 Davis, J L Fixed Sources of All Hemorrhage from Tonsillectomy and Its Absolute Control Laryngoscope 1914

3 Fetterolf George The Anatomy and Relations of the Tonsil in the Hardened Body Am J M Sc 144 37 (July) 1912

or from the innominate Total absence or dissociation of the internal carotid has been observed, a fact to be commented on later Moreover, the external carotid may be absent, in which case the usual branches of the external carotid come off the upward continuation of the so-called common trunk Finally, the internal carotid is occasionally, perhaps not infrequently, very tortuous or redundant in its cervical course Visible and frank pulsation of the pharyngeal wall due to the nearness of large, aberrant and tortuous vessels is apparently very common

In connection with arterial variations, it is interesting that "there is no definite bifurcation of the cephalic arterial trunk into an ectocarotid and entocarotid in ruminants A small branch of the carotid perforating the cranium represents the 'middle meningeal artery' and joins the 'rete mirabile', but this is mainly formed in advance by branches of the internal maxillary" [4] Quain [5] illustrates an arterial arrangement in which the internal carotid is entirely wanting, the main common carotid extending upward, giving off the usual branches that arise from the external carotid, the internal maxillary branch giving off a series of branches which pass through the formina at the base of the skull to form a rete mirabile and compensate for the absent internal carotid proper, a reversion to the condition in ruminants I made a similar observation some years ago Moreover, in many mammalia the internal carotid is more tortuous than in man Fisher,[6] quoting Chauveau says that the internal carotid of the seal is actually forty times as long as the distance it has to traverse

It is fallacious to believe that tortuosity of the internal carotid is acquired and found only in the old Indeed, Farlow [7] found large pulsating arteries which he believed to be due to tortuous internal carotids in patients as young as 14 years Moreover, Wood [8] reports large pulsating blood vessels in two children, aged 5 and 7 years, respectively It is more likely that the variations and tortuosities in the large blood vessels of the neck are a reversion to more primitive types

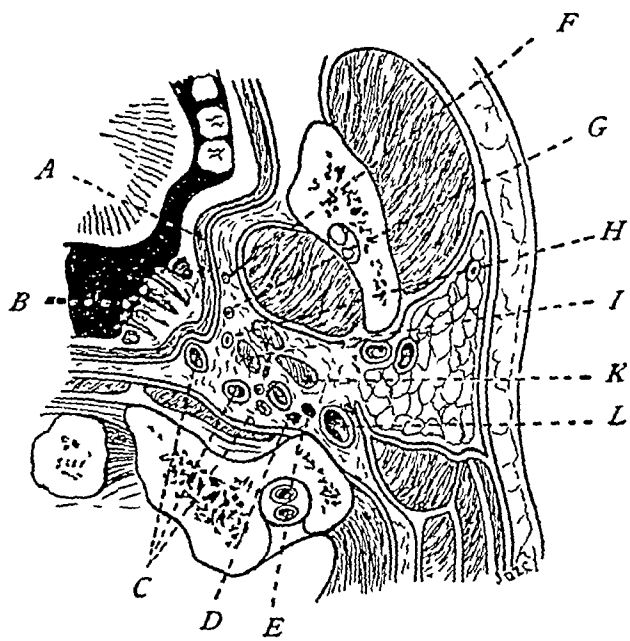

Fig 1—Transection through region of palatine tonsil Particularly note the nearness of the most median limb of the sigmoid internal carotid artery to the tonsillar bed also the rather intimate relationship of certain other fairly large arteries *A* superior constrictor muscle, *B* palatine tonsil *C* sections of the tortuous or sigmoid internal carotid artery *D* vagus nerve *E* hyoglossal nerve *F*, tonsillar branch of the external maxillary (facial) artery *G* ascending palatine artery *H* ascending pharyngeal artery *I* styloglossus and stylopharyngeus muscles and glossopharyngeal nerve *K*, stylohyoid muscle *L* internal jugular vein

THE SIGMOID OR TORTUOUS INTERNAL CAROTID

While no extensive review of the literature has been attempted, a hurried perusal of the subject leads me to believe that tortuosity of the internal carotid artery in man is not as rare as generally believed The redundancy or tortuosity of the artery lies in one of the three important morphologic planes—sagittal, coronal and transverse

Tortuosities in all of these planes have been observed and recorded

I recently observed in a frontal or coronal section of an adult head and neck prepared for classroom study in the course in clinical anatomy at the Jefferson Medical College, a very redundant and tortuous left internal carotid artery The common carotid divided slightly higher than at its usual level The internal carotid pursued its normal course until it reached the level of the plane between the nasal and oral portions of the pharynx, it then described a curve with its convexity directed mediad toward the palatine tonsil, and then coursed caudad to the level of the middle of the palatine tonsil, where it again described a medially directed curve, once more to ascend and to gain entrance to the carotid canal The final ascending limb of the sigmoid-shaped vessel passed in very close relationship to the superior constrictor muscle and the attached surface of the palatine tonsil

Figure 1 represents diagrammatically a cross-section of the specimen at the level of the palatine tonsil It will be noted that three internal carotid arteries are lying side by side in the section, representing, of course, the three limbs of the single but sigmoid internal carotid It is clearly shown that the final ascending limb is in close relationship with the superior constrictor and the attached surface of the palatine tonsil The most lateral of the three limbs represents the position of the normal internal carotid artery In Figure 3, which represents a drawing of the actual specimen, the sigmoid tortuosity in the coronal plane of the internal carotid artery is shown The final ascending or internal limb of the sigmoid is in contact with the pharyngeal wall

I made another observation of a tortuous internal carotid artery in the Yale Anatomical Laboratories In that case the tortuosity lay in the semisagittal plane The final ascending limb was pressed close to the tonsillar bed

The importance of the internal carotid in these positions need not be argued The superior constrictor is thin and the artery essentially in contact with the pharyngeal aponeurosis and the tonsillar capsule In all likelihood there was strong pulsation in the posterolateral region of the pharynx during the life of these individuals Unfortunately, no history was obtainable

4 Owen Richard Comparative Anatomy and Physiology of Vertebrates 3 547 1868
5 Quain Richard Anatomy of the Arteries of the Human Body Plate 13 Figure 8
6 Fisher A G T Sigmoid Tortuosity of the Internal Carotid Artery and Its Relation to Tonsil and Pharynx Lancet 2 128 130 1915
7 Farlow J W Eight Cases of Large Pulsating Arteries on the Posterior Wall of the Pharynx, Boston M & S J **113** 67 1890
8 Wood G B Anomalous Position of the Common Carotid Visible in the Pharynx Am J M Sc **124** 478 481, 1902

Skillern [9] reports an anomalous sigmoid tortuosity of the cervical portion of the internal carotid artery in a male cadaver about 60 years of age

Beginning at the base of the skull and extending two thirds of the distance to the bifurcation of the common carotid artery the vessel (the internal carotid) shows an S-shaped tortuosity the bends of which extend at no time more than 1 cm from a line representing the axis of the normal artery The artery overreached from its normal position of about 2 5 cm behind and to the outer side of the left tonsil over toward this organ

Dubreuil [10] refers to tortuous internal carotids, mentioning that one of the curves of the artery may approach the pharynx and tonsil

Barkow [11] describes and illustrates four striking anatomic specimens of sigmoid internal carotids

Fisher [6] describes an abnormal internal carotid artery, the tortuosity lying in the sagittal plane

This occurred in an elderly female in the dissecting room The condition was bilateral, one description will thus suffice for the two sides The common carotid divided at its usual level, the internal carotid pursued a normal course until it reached the level of the great cornu of the hyoid bone, it then described a course with its convexity directed forward This curve lay between the internal pterygoid muscle and the back of the outer surface of the tonsil, the superior constrictor muscle intervening This curve ended 3 cm above the angle of the mandible The artery then bent sharply on itself and ran downward and forward for 1 5 cm , then bending sharply a second time, it ran upward and backward to reach the level of the first bend and then ran almost directly upward to the base of the skull, the second bend came into relationship with the upper part of the tonsil, the superior constrictor intervening No other arteries were tortuous in this case

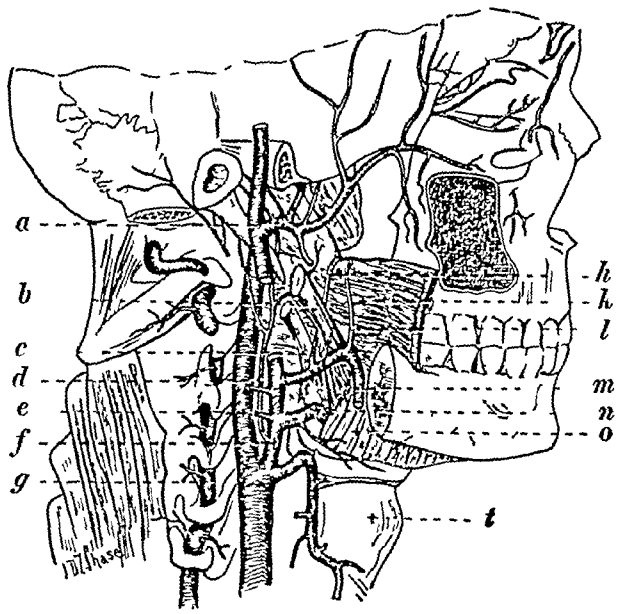

Fig 2 —Dissection of deep face region showing the more important arteries in relation to the external surface of the superior constrictor muscle and the floor of the palatine tonsil The internal carotid artery in this case pursues a directly vertical course It should be noted that both the external maxillary (facial) and the lingual arteries have conspicuous cephalically directed knees which come dangerously near the tonsillar wall *a* internal maxillary artery and branches *b* styloglossus muscle *c* stylopharyngeus muscle *d* ascending pharyngeal artery *e* internal carotid artery *f* external carotid artery *g* vertebral artery *h* a cending palatine artery *k* superior pharyngeal constrictor muscle *l*, tonsillar branch of external maxillary artery *m* external maxillary (facial) artery *n* lingual artery *o* hyoglossus muscle *t* thyroid cartilage

He describes another case from a dissecting room subject, a middle-aged man, in which both internal carotid arteries were tortuous, the tortuosity lying in the sagittal and partly in the coronal planes The second bend of the tortuosity was about 1 cm from the top of the tonsil Other arteries were tortuous in this case, especially the external cartotid, which lay very close to the lower part of the outer surface of the tonsil

Tortuosity of the internal carotid artery in the transverse plane is very rare However, a few cases are recorded Fisher, quoting Stimson, describes "an S-shaped fold or turn about an inch above the bifuracation, which drew the artery into a loop three quarters of an inch across, placed transversely in the neck, so that the upper portion of the loop was three quarters of an inch superficial to the line of the artery itself " As suggested by Fisher, such a case must have simulated aneurysm and can only occur in the lower part of the course of the artery, since above, the vessel cannot project far externally owing to the resistant structures by which it is separated from the surface It is for this reason that aneurysm of the internal carotid artery in the upper part of the cervical segment projects into the pharynx, following the line of least resistance He believes that this fact a'so accounts for the sigmoid curve being most commonly situated in the sagittal or cornal planes, an observation that is, doubtless, correct

Tortuosities of both internal carotid arteries were encountered by Edington [12] and by Rowlands and Swan [13] Further reports on anomalous internal carotids are found in contributions by Lake,[14], Roop,[15] Moorehead,[16] Sack [17] and Smith [18]

PULSATING ARTERIES OF THE PHARYNX

The condition of pulsating arteries of the pharynx is not unknown Klye [19] directs attention to it

The branches of the ascending pharyngeal may be unusually large or the ascending pharyngeal artery itself show distinctly in the wall of the pharynx This gives rise to a pulsating artery, owing to the fact that the blood vessel has no muscular support and also that, owing to its superficiality and the liability of the surrounding membrane to inflammatory conditions there is a marked tendency to aneurysm when such an anomalous condition occurs

Bosworth [20] states that "the ascending pharyngeal artery, although a vessel of some size, is not ordinarily visible on direct inspection of the pharynx, and yet a number of cases have been reported in which the artery was of such abnormal size, either on one or both sides, as to render its pulsations visible on direct inspection "

Wood [8] reports two interesting cases of pulsating blood vessels in the pharynx, one in a girl, aged 5 years, in whom "on the right side of the pharynx, projecting at times almost to the median line, is a large pulsating

9 Skillern P G Jr Anomalous Internal Carotid Artery and Its Clinical Significance in Operations on Tonsils J A M A **60** 172 (Jan 18) 1913

10 Dubreuil Des anomalies arterielles Paris 1847 p 93

11 Barkow Die Verkrummungen der Gefasse Breslau 1869 p 19 Comparative Morphologie des Menschen und der Menschenahnlichen Thiere, Breslau 1866, **5**, Tab VII

12 Edington G H Tortuosity of Both Internal Carotid Arteries Brit M J **2** 1526 1901

13 Rowland R P and Swan R H J Tortuosity of Both Internal Carotid Arteries Brit M J **1** 76 1902

14 Lake R Case of Aberrant Carotids Proc Roy Soc Med London Otol Sec **6** 21 1912 1913

15 Roop A P Anomalous Internal Carotid Artery J Indiana M A **6** 162 1913

16 Moorehead E G Tortuosity of Internal Carotid Arteries Brit M J **1** 332 1902

17 Sack N Ein Fall von abnormalen Verlauf der Carotis interna im Rachen Monatschr f Ohrenh **41** 277 1907

18 Smith G M Tortuosity of Internal Carotid Artery Brit M J **1** 1602 1902

19 Kyle D B Textbook of Diseases of Nose and Throat Philadelphia 1914

20 Bosworth F H Nose and Throat New York 1896 pp 370 371

blood vessel about the size of a lead pencil By forcibly depressing the tongue, this blood vessel can be seen running from below upward and slightly inward until it reaches a point about opposite the uvula, whence it takes a course slightly upward and outward" He also reports an enlarged pulsating artery on the right side of the pharynx in a boy, aged about 7 years The appearance of the condition was not unlike that described for the girl Wood suggests an enlargement of the internal carotid artery or an upward continuation of the common carotid trunk, in trying to arrive at some explanation of the condition He further states that it is not a very uncommon thing in atrophic throats to see pulsations of a small artery (ascending pharyngeal) on both sides of the median line, but that they can scarcely be mistaken for the condition described in the foregoing cases

Kelly [21] encountered a number of patients in whom large pulsating vessels in the pharynx were noticed It may not be amiss to quote him in one of these cases

The patient, a man, aged 75, complained of indistinct speech This was found to be due to the contraction of syphilitic cicatrices of the soft palate In the course of the examination a large pulsating vessel was seen projecting from the angle between the posterior and right lateral walls of the pharynx It emerged from the posterior wall about the level of the upper border of the epiglottis and ascended vertically, becoming gradually more prominent When opposite the upper part of the tonsil where its convexity was most marked and its pulsations best seen, it curved upward and disappeared in the tissues at the side of the nasopharynx It was fully as thick as a pencil and extended laterally over a considerable part of the posterior wall of the pharynx The mucous membrane covering it was normal Pressure over the large vessel on the right side of the neck, above the level of the upper border of the thyroid cartilage, checked the pulsation in the pharynx Nothing abnormal was detected in the condition of the walls of the vessel, nor in those of the temporal or radical arteries There were no symptoms that could be attributed to its presence The appearances have remained unchanged during the nine months that have elapsed since his first visit

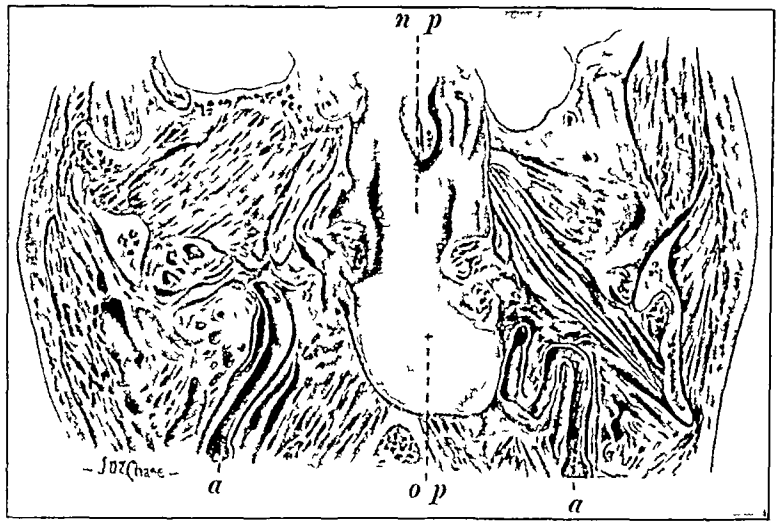

Fig 3.—Frontal section exposing the posterior wall of the nasal and oral portions of the pharynx Particularly note the tortuous or sigmoid internal carotid artery on the left side and the fact that the final ascending limb of the artery comes into actual contact with the superior constrictor muscle thereby being in danger's way in tonsillectomy *n p* nasal pharynx *o p* oral pharynx *a a* internal carotid artery

Kelly reports a similar case in a woman, aged 75, another in a patient, aged 72, in which there was a marked pulsation with slight difficulty in swallowing, and a fourth case in a patient aged 22 Moreover, he observed a number of cases of pulsation of the lateral walls of the pharynx without bulging

Kelly concludes that some, if not all, of the cases of large pulsating vessels in the pharynx are due to a tortuous condition of the internal carotids, and regards as highly improbable that so small a vessel as the ascending pharyngeal could become dilated to such a degree He cautions that pulsations of the lateral walls of the pharynx often escape notice, owing to their being masked by the involuntary movements of the posterior faucial pillars and adjacent parts accompanying respiration

That the ascending pharyngeal artery is at times of sufficient size to cause fatal hemorrhage is evidenced by Baker's [22] case in which the ascending pharyngeal artery was injured by a tobacco pipe The injury to the ascending pharyngeal was established by postmortem examination

Farlow [7] reports eight cases of large pulsating arteries on the posterior walls of the pharynx, the patients ranging in age from 14 to 68 years In commenting on this series he says

It has seemed strange to me that so large a number of such cases should come to my notice Possibly I have been, more than usual, on the lookout for them I am inclined to think, however, that a thorough inspection of the sides of the pharynx will bring to light a greater number of instances than have hitherto been reported

Barnes,[23] Sharp,[24] Sanderson,[25] Griffin,[26] Schmidt,[27] and others report cases in which pulsating vessels project into the pharynx Some of these authors believe that the ascending pharyngeal artery is enlarged Schmidt holds that the internal carotid artery is the underlying factor

PRACTICAL APPLICATION

The extrinsic arteries of the palatine or faucial tonsil and of the pharyngeal (adenoid) tonsil are usually too small or too remote and well surrounded by muscle and loose connective tissue to give rise to the visible pulsation in the pharyngeal wall Also, the internal and external carotid arteries, as a rule, are too remote from the pharyngeal wall to be factors in this regard Despite this, however, these vessels do at times come dangerously near the tonsillar fossa, and not infrequently give rise to visible pharyngeal pulsation Moreover, the intrinsic tonsillar vessels may be excessively large, and aberrant intrinsic tonsillar arteries are now and then encountered The peritonsillar venous plexus is a considerable one, as is also the pharyngeal venous plexus The location of these plexuses immediately ectal to the constrictor muscle and its thin covering, the buccopharyngeal fascia, is significant

21 Kelly A B Large Pulsating Vessels in the Pharynx Glasgow M J 49 28 34 1898

22 Baker W M Fatal Wound of the Ascending Pharyngeal Artery by a Tobacco Pipe St Bartholomew's Hosp Rep 12 163 166 1876

23 Barnes Lancet 2 623 1875

24 Sharp L Union med du Canada 1896 p 17

25 Sanderson Brit M J 2 625 1887

26 Griffin Med Rec 2 247 1896

27 Schmidt Die Krankheiten der oberen Luftwege Ed 2 1897, p 19

The importance of detecting abnormal pulsation on the dorsolateral wall of the oral pharynx, and full appreciation of the location of the important arteries and venous plexuses, before performing tonsillectomy or incising a peritonsillar abscess, cannot be overstated Injury of the internal carotid artery during tonsillectomy has caused fatal hemorrhage in a number of cases The same applies to the nasal pharynx and the removal of adenoid vegetations Brown reports a case of death from hemorrhage in an adenoid operation, the necropsy disclosing an injury to a tortuous internal carotid Fetterolf also cautions that serious postoperative hemorrhage may result from injury of the tonsillar and the pharyngeal venous plexuses

An eminent laryngologist told me that recently he refused to perform a tonsillectomy in a case referred to him for operation because, on examination, he found marked pulsation, simulating an aneurysm, of a very large blood vessel in the tonsillar field He considered the hazards too great to operate since, in addition to the pulsating vessel, the faucial pillars were markedly bound down by adhesions, the results of previous attacks of tonsilitis and quinsy Despite the obvious presence of a very large and superficially placed artery, the attending physician failed to observe its presence and pulsation, much less appreciating the gravity of operating in the case Fortunately, the patient fell into the hands of a trained laryngologist for treatment

Wood, in commenting on one of his cases of visible pulsating vessels of the pharynx (described above), aptly says

> If in such a case a retropharyngeal abscess coexisted, or a suppurative peritonsillitis were to develop in the posterior position the surgeon having done his duty by giving vent to the pus might easily find himself called on to check a most embarrassing hemorrhage

CONCLUSIONS

1 It would appear that, in addition to a painstaking inspection, careful palpation of the tonsillar field should be practiced in all cases preliminary to a tonsillectomy, in order to judge of the nearness of large or aberrant blood vessels The red flag of danger appears when the superior constrictor muscle and the thin buccopharyngeal fascia are inadvertently torn in operative procedures

2 The large artery frequently visible in the wall of the oral pharynx and in intimate topographic relationship with the palatine or faucial tonsil is usually a redundant and tortuous internal carotid The common carotid stem in the absence of the internal carotid, the external carotid, and the ascending pharyngeal and the ascending palatine arteries, likewise, at times, give rise to visible pharyngeal pulsation

3 The redundant or tortuous internal carotid artery and agenesis of the internal carotid proper represent a reversion to more primitive types

4 Age has no bearing on the development and presence of a tortuous internal carotid artery

5 Tortuosity of the internal carotid artery seems to occur more frequently in the female However more cases must be studied before conclusions of value can be reached Certainly it would be unwarranted to say that tortuosity of the vessel is sex-linked in inheritance

4634 Spruce Street

American Trypanosomiasis—The acute infection is found in the majority of cases in children during their first months or, at most, during the first year of their life—Chagas

MELANO-EPITHELIOMA OF THE PALATE *

GORDON B NEW, M D
AND
FRENCH K HANSEL M D
ROCHESTER MINN

In a thorough review of the literature we have been able to collect only twenty-four cases of primary melano-epithelioma of the palate One case at the Mayo Clinic, which was observed in 163 cases of melano-epithelioma of the body in general, and thirty-two primary epitheliomas of the palate, makes a total of twenty-five cases

The first melano-epithelioma of the palate was reported by Weber,[1] in 1859 The twenty-four cases were reported by Weber,[1] Reid,[2] Albert,[3] Gussenbauer,[4] Treves,[5] Maude,[6] Volkmann,[7] Martens,[8] Broeckaert,[9] Liebold,[10] Fuchs,[11] Stein,[12] Eve,[13] Ball,[14] Seidel,[15] Mayer,[16] Roy,[17] Eisenmenger,[18] von Mikulicz, Braun Billroth and Eder, who each reported one case, and Ebermann,[19] who reported two cases All of the cases were verified with the exception of those reported by Billroth, von Mikulicz, Braun and Eder These were cited by Seidel,[15] who did not give the references to the original articles

Melanotic tumors have been variously classified as melano-epithelioma, melanosarcoma, melanocarcinoma, melanoblastoma, melanoma and chromatophoroma Broders and MacCarty[20] prefer the term melano-epithelioma whether the tumor occurs in the mucous membrane or in the skin, since they believe that the pigment-bearing cells arise directly as a proliferation of the germinative cells of the skin or the cells of the parenchyma of organs

Symmers[21] believes that the term chromatophoroma or melanoma should be used, since the lesion arises from a pigment-bearing cell known as the chromatophore

* From the Section on Laryngology and Oral and Plastic Surgery Mayo Clinic

1 Weber O quoted by Eisenmenger (Footnote 18)
2 Reid T Resection des ganzen Oberkiefers Jenaische Zt chr f Med u Naturwissensch **1** 215 1864
3 Albert E Lehrbuch der Chirurgie und Operationslehre Vienna Urban und Schwarzenberg 1877
4 Gussenbauer C Sarkome des harten und weichen Gaumen Prag med Wchn chr **11** 171 1886
5 Treves F Melanotic Sarcoma of the Hard Palate Tr Path Soc London **38** 350 352, 1886 1887
6 Maude A Case of Melanotic Sarcoma of Hard Palate St Bartholomew s Hosp Rep **26** 169 171 1890
7 Volkmann R Ueber Endotheliale Geschwulste zugleich ein Beitrag zu den Speicheldrusen und Gaumentumoren Deutsch Zt chr f Chir **41** 1 180 1895
8 Martens M Zur Kenntniss der bosartigen Oberkiefergeschwulste und ihrer operativen Behandlung Deutsch Ztschr f Chir **44** 483 571 1897
9 Broeckaert Notes sur un cas de sarcoma melanique du voile du palais Bull Soc belge d otol **4** 65 72 1899
10 Liebold W P J Ueber melanosarkome des harten Gaumens nebst Beobachtungen uber das Schwanken der Pigmentbildung in Recidivtumoren und Metastasen Inaug Diss Leipzig 1901
11 Fuchs B Die Oberkieferund Gaumenge chwulste aus den Jahren 1891 1901 Inaug Diss Breslau, 1902
12 Stein A E Zur Statistik und Operation der Geschwulste des Oberkiefers Arch f klin Chir **65** 490 515 1902
13 Eve F A Lecture on Melanoma Practitioner **70** 165 174 1903
14 Ball J B A Case of Melanotic Sarcoma of the Soft Palate West London M J **9** 207 1904
15 Seidel H Melanosarkom des harten Gaumens Ein Beitrag zur doppel eitigen Oberkieferresektion Deut ch Ztschr f Chir **80** 209 227 1905
16 Mayer Tumeur melanique du voile du palais J de chir et ann Soc belge de chir **5** 198 1905
17 Roy J N Primary Melanosis of the Palate Nasobuccal Fistula of Recent Sarcomatous Origin Med Rec **72** 730 732 1907
18 Eisenmenger V Ueber die plexiformen Sarkome des harten und weichen Gaumens und deren Stellung zu den anderen dort vorkommenden Ge chwulsten Deutsch Zt ch f Chir **39** 1 34 1894
19 Ebermann A A Beitrag zur Ca uistik der melanoti chen Ge chwulste Deut ch Ztschr f Chir **43** 498 527 1896
20 Broders A C and MacCarty W C Melano Epithelioma A Report of Seventy Cases Surg Gynec & Obst **23** 28 32 (July) 1916
21 Symmers D The Melanomata Interstate M J **24** 979 982 (Oct) 1917

ETIOLOGY

Melano-epithelioma, particularly the type originating in the skin, eye, eyelid, mucocutaneous surfaces of the vulva and anus, penis, ovary, epididymis and pineal gland, arises in pigment-bearing cells In horses, melano-epithelioma is quite common in the anorectal region, where there is an abundance of pigmentary tissue Liebold has suggested that since the palatal tissue is embryologically derived from the ectoderm, and since this tissue may therefore contain pigment, it may be possible that melano-epithelioma of the palate originates in these cells The mucous membrane of the human palate is normally nonpigmented, but some animals have a nonpigmented palate, and others may normally have dark palates, such as the horse, cow, dog, deer and fox The maki, on the other hand, has a pigmented palate White and dark palates may occur in the same race of animals

Melanosis of the palate in man may be a precursory sign of future disease, the beginning of a new growth or a complication of an already existing growth In only six of the twenty-five cases of melano-epithelioma of the palate were areas of pigmentation noticed previous to the appearance of the growth In Roy's [17] case the patient had noticed the appearance of a small area of pigmentation following an injury to the palate by a pipe-stem, from this area the tumor developed In the four cases reported by Ball,[14] Mayer,[16] Eve [13] and Maude,[6] a small area of pigmentation was noticed on the palate previous to the appearance of the tumor Treves' patient noted an area of pigmentation following an injury to the palate by a dental plate, which he had worn for several years

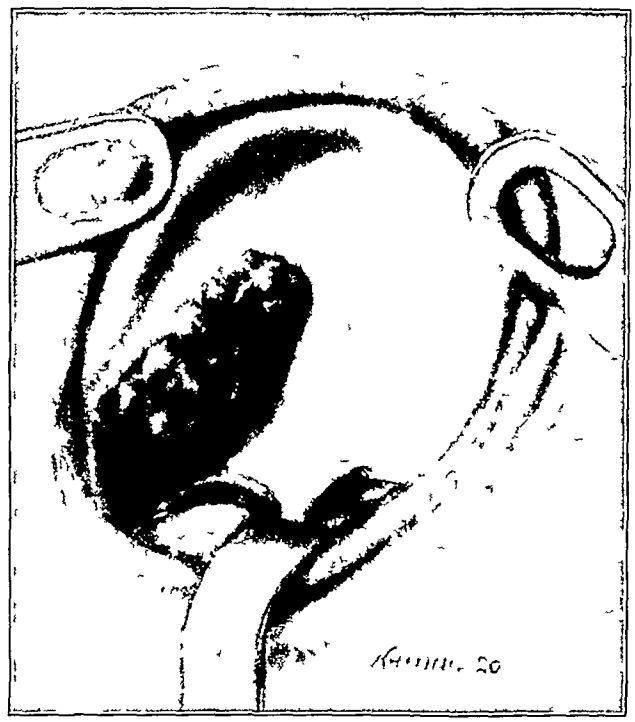

FIG 1.—Melano epithelioma of the right palate and anterior pillar

SYMPTOMATOLOGY

Practically all of the patients complained only of the presence of a tumor of the palate, and sought examination because of it The tumors did not cause pain unless they were very large, and there were dysphagia and swelling of the mouth and throat Difficulty in speaking and chewing were complained of in the cases in which the tumor was extensive Hemorrhage sometimes occurred because of the vascularity of the tumors and their proneness to injury during the process of eating

In fourteen patients the cervical glands were involved at the time of the first examination One patient noticed glandular enlargement before the discovery of the primary tumor on the palate

The duration of symptoms varied from one month to four and one-half years The average duration was fifteen months Seven of the patients were women and eighteen were men The youngest was 24 and the oldest 84, the average age was 54

HISTOPATHOLOGY

Petit [22] made a series of sections from melano-epitheliomas in animals and described the mechanism of the formation of pigment The sections were made of different areas of the tumor, such as the nonpigmented, the partly pigmented and the deeply pigmented, in order to show the formation of pigment in the various stages It was demonstrated that the melanotic infiltration is produced as a secretion or protoplasmic elaboration of the cell independent of any vascular action The granules of pigment occur in the cell as the specific granules that are precipitated or concreted in a glandular cell, just as the fat granules are accumulated in a connective tissue cell in the formation of adipose tissue, with the difference that the fat forms from one to several large droplets, whereas the melanin remains dispersed in the form of granules Soon after the pigmentation appears, the cell, which is fusiform at first, soon becomes globular and so black that the nucleus is invisible The pigment is first seen in the cell as small dark granules in the protoplasm As the process progresses, the cell gradually becomes darker, finally the nucleus and cell outline becomes indistinct and a small ball of pigment remains These balls disintegrate, and the tumor becomes a blackish mass Through the destruction of the vessels in the foci of softening, the pigment enters into the blood stream, which carries it over the body, and causes a generalized pigmentation Likewise emboli of living cells may form in a vein and lead to metastasis

Microscopically, these tumors show an alveolar arrangement of spindle and oval cells and occasionally giant cells Some of the cells are pigmented and some are not The former show varying amounts of brown and black pigment When the cell becomes filled with the pigment the nucleus and cell outline are indistinct, and only a small dark mass can be see Fibrillar connective tissue also shows the presence of pigment granules Areas of degeneration and hemorrhage are seen in various places in the tumor The endothelium of the blood vessels may also contain pigment granules Dipping down from the surface epithelium, areas of epithelial hyperplasia may be traced into the main portion of the growth Early recurrences may not show pigment

A tumor which is only slightly pigmented may give rise to a very deeply pigmented metastasis and, con-

22 Petit G Le mecanisme de la pigmentation dans le sarcome melanique Rec de med vet Paris 95 121 130 1919

versely, a deeply pigmented primary tumor may metastasize in the form of a nonpigmented or only slightly pigmented tumor

Melano-epithelioma of the palate metastasizes early, usually first in the neighboring lymph glands, and late as a general metastasis Melano-epitheliomas of the eye and skin, on the other hand, may metastasize very early in the lungs, liver, brain, skin, etc

DIAGNOSIS

The diagnosis of primary melano-epithelioma of the palate usually is not difficult The rapidly growing pigmented, nodular, somewhat pedunculated tumor, usually soft in consistency and vascular, is characteristic of this type of neoplasm The glands of the neck become involved early by metastasis, and later a general melano-epitheliomatosis may occur An early melano-epithelioma of the palate may be confused with other forms of pigmentation, such as that following small hemorrhagic areas in the submucosa in certain blood dyscrasias Poisoning with bismuth and lead may also cause a pigmentation of the gums and palate The following case (271870) is an illustration of a mistaken diagnosis of melano-epithelioma of the palate

A woman aged 40 came to the clinic with a small pigmented nodule of the palate which had been diagnosed elsewhere as melano epithelioma Two months before she had noticed the growth while she was inspecting her teeth She consulted her family physician, who suspected melano-epithelioma and advised her to look elsewhere on her body for evidence of pigmentation or primary growths Three small areas of bluish discoloration were found on the vulva There was no history of injury to the palate, but when she was 5 years of age she had fallen over a chair and injured the vulva Several other physicians corroborated the diagnosis of the first consultant, and gave the usual poor prognosis

Our examination of the palate revealed a small slightly elevated blackish, hard nodule about 5 mm in diameter in the right side of the soft palate near its juncture with the hard palate A general examination did not reveal evidence of other pigmentation of the skin Three small hemangiomas on the vulva were found

The patient was advised to have the nodule of the palate widely excised for diagnosis Encysted in the removed tissue was a small piece of lead 4 mm long from a lead pencil Microscopic examination of the tissue did not show malignancy The lead had become diffused in the tissues and caused a black pigmentation characteristic of melano-epithelioma.

PROGNOSIS AND TREATMENT

Rapidly growing melano-epitheliomas are considered the most malignant type of neoplasm There are, however, other types that are slow growing and are less malignant, for example, the malignant moles In seventy cases of melano-epithelioma of the skin, reported by Broders, the average duration of the lesion before examination was eleven years

Thirty-eight of these patients were traced following operation Twenty-four (63 per cent) died within one year following the last operation, the average duration of life was eleven months and three days

Seventeen of the twenty-five patients with melano-epithelioma of the palate were operated on, the remaining eight were considered inoperable Several types of operation were employed, such as resection of the upper jaws and palate, wide excision of the growth by means of the chisel and mallet, curettement, and the cautery In our case the growth was cauterized with soldering irons, and radium applied We do not believe that removal of the glands of the neck in an attempt to block the growth from metastasizing is of value, nor is a block dissection of value when a gland of the neck is involved

Since many of the twenty-five cases were reported shortly after operation, it is not, of course, possible to give a prognosis with regard to end-results It is evident, however, that surgical intervention or radium either locally or over the neck is usually futile

Fig 2.—Photomicrograph of melano-epithelioma of the palate

REPORT OF A CASE

X D (Case 298143), aged 62 a farmer, came to the clinic, Nov 28 1919 because of a tumor about 1 cm in diameter of the right side of the palate which he had noticed one month before by feeling it with his tongue The tumor had grown very rapidly for the last two weeks A piece of the growth was removed by the patient's home physician and microscopic examination revealed melanosarcoma The patient had not worn dental plates and there was no history of trauma or pigmentation on the palate The tumor had bled slightly on several occasions A slight defect in the speech was the only symptom manifest

Examination revealed a tumor on the right side of the palate about 3 by 4 cm extending from the posterior margin of the hard palate half way forward on the palate (Fig 1) At the right posterior lateral margin it extended down onto the anterior pillar The growth was pedunculated, irregular, with a nodular surface, but was not ulcerated It was soft mottled with bluish-green pink and black areas and was very vascular, bleeding easily on manipulation The pedicle was attached to the posterior margin of the hard palate There were no enlarged glands and no evidence of pigmentation or metastasis elsewhere A roentgenogram of the chest was negative Examination of the urine was negative for melanin and the Wassermann reaction and the eye findings were negative A clinical diagnosis of primary melano-epithelioma of the palate was made The unfavorable prognosis was explained to the patient but it was decided to attempt the removal of the growth

December 3 a piece of the growth was removed for microscopic examination, this showed the typical structure of melano-epithelioma (Fig 2) The tumor was thoroughly

cauterized with soldering irons, and twelve days later 50 mg of radium was applied to the open wound for ten hours with no screening except the radium container, less than 1 mm in thickness

Jan 20 1920, the patient returned with the wound of the palate healed and no evidence of recurrence or metastasis A slightly enlarged hard gland was palpable in the right submaxillary region Four thousand milligram radium hours were applied to the right submaxillary and cervical regions with 1 inch distance and 2 mm of lead screening The patient was examined again, March 15, 1920 There was no local recurrence or change in the glands and no general metastasis Roentgen-ray treatment was given to the right side of the neck

The patient continued to receive occasional roentgen-ray treatments over his neck, and Nov 29 1920 he returned with a recurring growth on the palate 1 by 2 cm A small portion of the growth was covered with mucous membrane and the remaining part was pedunculated In the right submaxillary region was a large hard freely movable gland about 4 cm in diameter and in the right upper deep cervical region a hard slightly fixed gland about 3 cm in diameter Roentgen-ray treatment was applied to the glands

Feb 8, 1921, the growth had increased to 2 5 by 0 5 cm and involved the right side of the palate at the juncture of the hard and soft parts, extending from the alveolar process to the midline of the palate The growth was soft, vascular and fixed to the underlying bone It was pigmented except for a small area near the middle The gland in the right submaxillary region had increased to 4 5 cm, and the one in the upper deep cervical region to 5 cm in diameter No other glands were found to be involved and there was no evidence of general metastasis The general health of the patient was good Roentgen-ray treatment was applied to the glands The patient has not been examined since, but the prognosis is very unfavorable

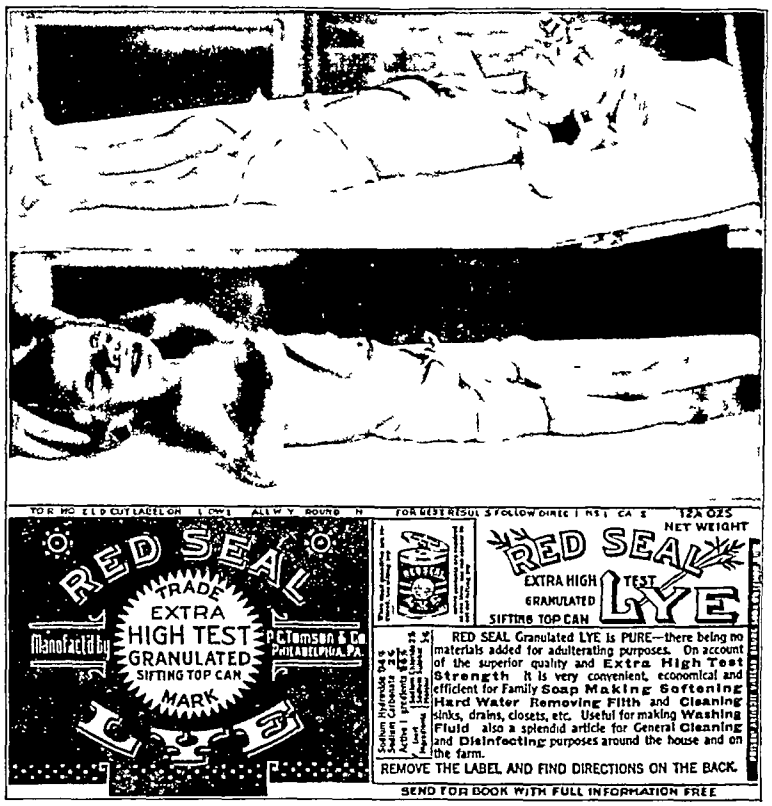

Fig 1.—From a photograph of a child fatally burned by swallowing Red Seal Lye The lower part of the illustration shows the inadequacy of the warning common to all labels of lye containers sold in groceries and used in kitchens Parents are not aware of the danger of leaving the lye preparations in the reach of children This label is removable to get at the directions on the back and removal usually destroys or removes the tiny inconspicuous vertical cautionary wording

Fads in Treatment of Tuberculosis—In the treatment of tuberculosis perhaps more than in any other disease, failure and disappointment while discouraging has not daunted workers In no disease does fashion in therapeutics play so considerable and at the same time so ignominious a part But there, nevertheless appears to be almost a conspiracy to ignore or, at any rate not to profit by the lessons of failure There are waves of advocacy of this or that method of treatment which in turn are condemned with often unnecessary emphasis Tuberculin domiciliary treatment, the sanatorium the dispensary the colony system various forms of drug therapy and other methods have their periods of popularity and disillusion Yet in almost all there are elements of good—H Gauvain *Brit J Tuberc* **15** 1 1921

ESOPHAGEAL STENOSIS FOLLOWING THE SWALLOWING OF CAUSTIC ALKALIS

CHEVALIER JACKSON, M D
PHILADELPHIA

J P, aged 2 years, referred to me by Dr Walter Lathrop, was in an almost moribund condition from food and water starvation, on admission at the Bronchoscopic Clinic, Jefferson Hospital He was unable to swallow solids, and water or other liquids were regurgitated without having reached the stomach He was extremely emaciated (Fig 1), the skin was dry and hot, the face was shrunken, the expression anxious, the eyes were sunken and surrounded by deep, dark circles The little sufferer called constantly for water which he would try over and over again to swallow, but each mouthful would immediately come back out of his mouth

Three months before admission, the child had put some lye (afterward found to be of the 'Red Seal" brand) in his mouth He was severely burned about the mouth at the time and after these burns healed he was able to swallow food of the consistency of rice Swallowing gradually grew worse until even liquids would not go down Application for relief being made at the state hospital, the patient was at once sent to me

Because of the imminent danger of death from water hunger the child was transferred to the service of J Chalmers DaCosta, and Thomas Shallow immediately performed a gastrostomy Water was gotten into the stomach and later, milk The child slowly began to improve, and when there had been sufficient gain in strength, a roentgen-ray examination of the esophagus was made by Willis F Manges, who discovered a very narrow stricture at the level of the eighth dorsal vertebra, where there was a probelike lumen about one-fourth inch in length Above this about 2 or 3 inches the lumen was about one-eighth inch in diameter

The feeding was placed in charge of Edward E Graham, and improvement with slight gain in weight for a time gave some hope of recovery, but the conditions due to gastrointestinal and renal complications resulting from the prolonged food and water starvation grew worse, and the child died of uremia about six months after admission nine months after it had swallowed the lye It never lost the emaciation shown in Fig 1 nor improved sufficiently to warrant the beginning of esophagoscopic treatment for the cure of the stricture

COMMENT

The medical and surgical aspects of this case are not germane to the purpose of this report I wish to call

attention to the fact that this child, in spite of the best of medical and surgical care, died as the result of swallowing a powerful corrosive poison (94 per cent sodium hydroxid) that was purchased in a grocery store, and that the poison label on the container in which it is sold is so minute as to afford no sufficient warning of the great danger of leaving the preparation in reach of children Moreover, the tiny typed wording reads vertically, which contributes to its being inconspicuous I do not say that either this vertical position or the smallness of the type is for the purpose of rendering the word "poison" inconspicuous, as, of course, I have no means of knowing Simply the facts that have a bearing on the frequency of these shocking accidents, and on the need for regulations for their correction, are recorded here

I have had four cases of esophageal stricture in children and one in a man due to the swallowing of "Red Seal Lye" In two cases the stricture resulted from swallowing "Babbitt's Lye", in one case from "Merry War Lye", in one case "Kleanall", in one case "Snowboy" In many of our cases the name of the preparation was unrecorded or unobtainable That Red Seal Lye is more often the cause is due not to greater corrosive activity nor to a less adequate label, but probably to the fact that there seems to be more of it sold than of other preparations The name of the preparation is immaterial The fact is that not one of the caustic alkalis sold for cleansing purposes, so far as I have been able to discover, has a sufficient warning of the dangerous nature of the contents In 1910 I[1] called attention to this fact and mentioned that poisons sold by druggists to the laity are subject to legal regulations as to labeling, *and such drugs go into the medicine cupboard while the caustic alkalis sold by the grocer go into the kitchen* The subject has been referred to by Hubbard, Imperatori, Arrowsmith and others All of the men doing esophagoscopy have some of these little children under treatment at all times Since my first publication, a steady stream of these cases has passed through the Bronchoscopic Clinic As to the frequency of the accident, Figure 2 will convey some idea It shows the number of lye-stricture cases under treatment at one time at the Bronchoscopic Clinic, in fact a number of additional cases were under treatment as outpatients at the same time We are able to cure many of the little sufferers, and improve many more, but a number are, as in the case herein reported, so badly burned that recovery is impossible

Efforts at remedial legislation have met opposition from manufacturers It is time the influential members of the medical profession took the matter in hand in such a way that any one buying these corrosive poisons shall be warned of the dangerous nature of the contents by a label so conspicuous as to compel attention, such as the druggist is required to use in selling any kind of poison

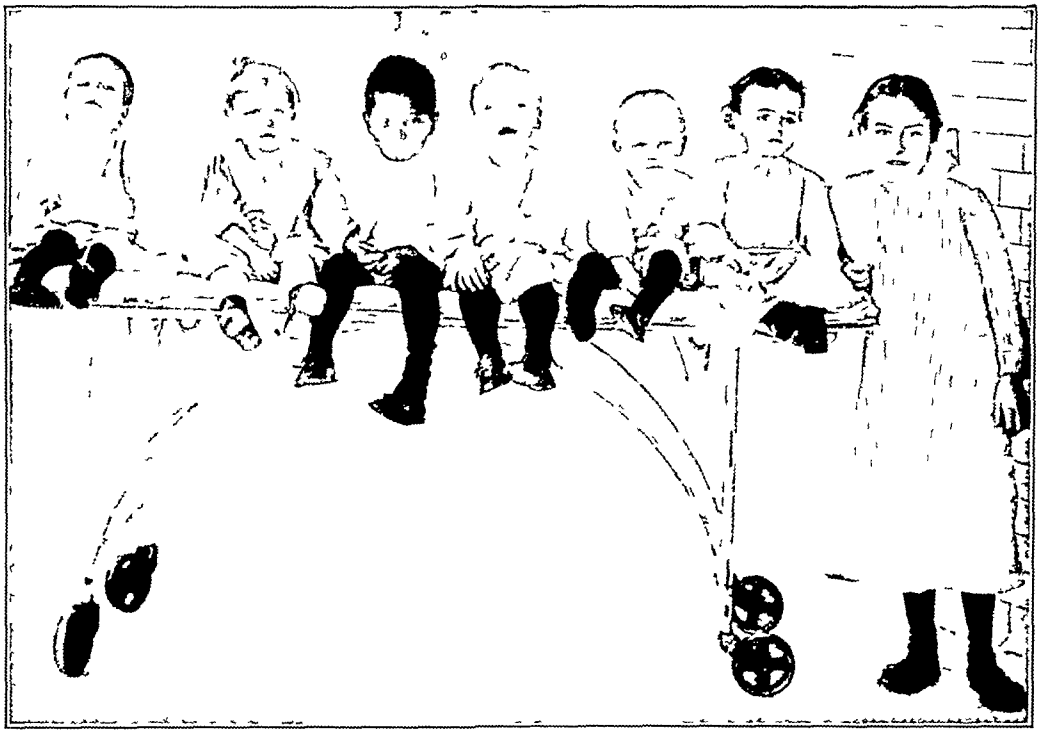

Fig 2.—All these children were under treatment at one time in Jefferson Hospital for cicatricial stenosis of the esophagus caused by swallowing commercial preparations of lye that were not labeled with sufficient clearness

1 Jackson Chevalier Esophageal Stenosis Following the Swallowing of Caustic Alkalis J A M A 55 1857 (Nov 26) 1910

Endocrinologists—Certain practitioners calling themselves endocrinologists have erected an extraordinary structure of symptomatic complexes based on meager evidence and a fervid imagination This has reached its climax in a recent monograph by a psychiatrist, Laignel-Lavastine There is no way apparently of checking these elaborations, which bear about as much relation to the functions of the ductless glands as did the phrenological imaginings of Gall and Spursheim to cerebral localization Epidemics of this sort from time to time hysterically sweep over medicine dying out in due course the more quickly if unmolested—Cushing, Harvey The Special Field of Neurological Surgery after Another Interval *Arch Neurol & Psychiat* 4 622 (Dec) 1920

STERILIZATION OF CLOSED CAVITIES BY LAVAGE AND STAINING WITH GENTIAN VIOLET

DESCRIPTION OF TECHNIC

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NEW YORK

That sterilization of joints could be brought about by lavage and staining in cases in which the infection was not of too long standing, has been shown in a number of previous publications [1] The procedure employed for

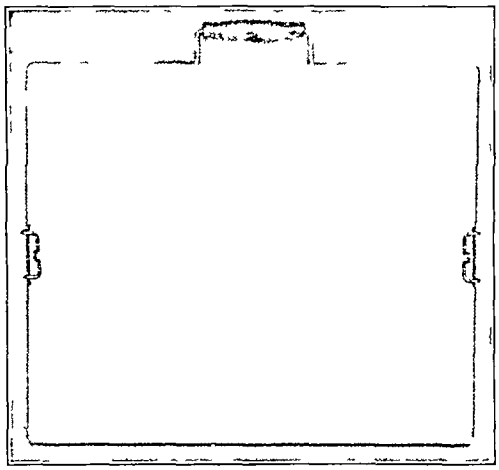

Fig 1—Apparatus for lavage and staining of joints, container closed, ready for sterilization

this purpose included a preliminary mechanical cleansing of the surface of the synovial membrane, followed by the introduction of a penetrating, persisting, nonirritating substance of moderately strong bacteriostatic power (gentian violet), the whole operation conducted under local anesthesia, through a large bore needle Though it would doubtless be possible to carry out such lavage and staining with a simple outfit like an ordinary syringe or a gravity apparatus, it is difficult if not impossible to carry out a thorough lavage in this way and to maintain at the same time anything like a satisfactory aseptic technic That lavage of the most thorough kind is essential has been repeatedly emphasized, it is idle to expect to sterilize a mucous membrane by applying to its surface a bacteriostatic agent unless that membrane has previously been cleansed so that the bacteria on and in it can actually be reached

In order to make thorough lavage possible and easy, and at the same time to avoid risk of introducing contaminating organisms into the joint as well as to insure that the operation, even of long continued lavage, be neatly done, a special apparatus was devised and has been described in THE JOURNAL [2] This apparatus met all the requirements, and the results obtained with it were encouraging It was unnecessarily clumsy, however, and the expense of its manufacture was prohibitive A simpler apparatus based on similar principles has been devised and may now be obtained from the Kny-Scheerer corporation, New York This apparatus is illustrated in Figures 1, 2 and 3

It was suggested in earlier articles that the principles of lavage and staining, applied with some success to infections within the joint cavity, might be applied also to early infections within the thoracic cavity A publication has recently appeared [3] describing the application of this suggestion in two cases of pyothorax developing after the production of an artificial pneumothorax The success in these two cases led the author to speak with some enthusiasm of the possibilities of this method in fresh pyothorax From a personal communication I understand that gentian violet is being used in infections of the thorax in one of the clinics in Madrid, with results which suggest that in certain types of cases it may prove of some value

The apparatus here described has been devised with the thorax as well as the joints in mind Bottles larger than needed for the lavage of joints have for this reason been used, a cock has been provided (Fig 3*f*) which makes it possible to empty the bottles as often as desired, without otherwise disturbing the apparatus, so that any amount of pus can be aspirated from the chest, and the caliber of all openings in the apparatus has been made one-fourth inch (inside measurement), so that any material which will pass through the largest aspirating needle which can possibly be used will be too small to clog the apparatus

It must, of course, be remembered that the problem of infections within the chest is by no means as simple as that of infections within the joints The difficulties presented by the pressure conditions in the thorax must be borne in mind, and the problems that they present have not been worked out Nor is there the slightest reason to suppose that lavage and staining would be of any avail in an empyema of long standing, the notion that this procedure should supplant open thoracotomy in such cases should not be tolerated In cases of early effusion, however, the success which has attended the

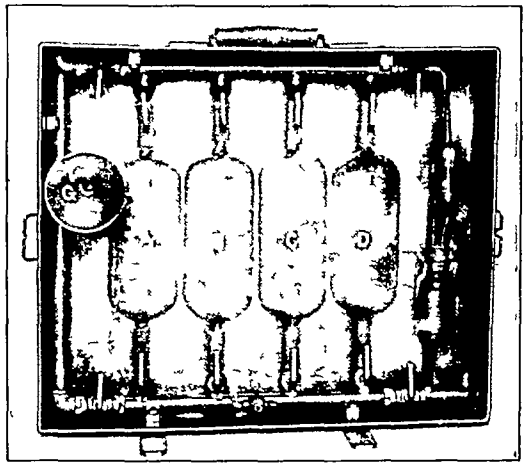

Fig 2—Apparatus with lid removed *A* bottle containing gentian violet *B* bottle containing alt solution *C* empty bottle to receive washings *D* empty bottle to receive aspirated pus from joint *E* cotton filter, *F* trap *G* funnel screwed into containing socket

modest attempts made to apply the method used in the joints to infections in the chest suggests that the procedure should receive further study

It is necessary, perhaps, to state that if the therapeutic possibilities of gentian violet have been spoken of with some enthusiasm, the sharp limitations to its

1 Churchman J W Treatment of Acute Infections of the Joint by Lavage and Direct Medication J A M A **70** 1047 (April 13) 1918 Static Arthritis of the Knee Accompanying Fracture of the Patella ibid **72** 1280 (May 3) 1919 Selective Bacterio tasis in the Treatment of Infections with Gentian Violet ibid **74** 145 (Jan 17) 1920 Gentian Violet in the Treatment of Purulent Arthritis ibid **75** 583 (Aug 28) 1920

2 Churchman J W Footnote 1 first reference

3 Waters Am Rev Tuberc **4** 875 (Feb) 1921

use have by no means been overlooked It is probably not a very strong bactericidal agent, such value as it has depends rather on its penetrative power, on its persistence, on its lack of toxic qualities and on its marked selective bacteriostatic action The limitations to which this dye and probably all selective bacteriostatic agents are subject have been repeatedly emphasized in the large number of experiments performed on the subject in recent years, and reference may particularly be made to articles in the May number of the *Journal of Experimental Medicine* (1921) in which attention is called to many of the difficulties—some of them not previously recognized—which attend the transfer of observation of bacteriostatic quality of "antiseptics" into therapeutics The purpose of my experimental studies has been not so much to establish the value of a given therapeutic agent (though this has, within certain limits been established) as to determine some of the principles which must be understood before any selective agent can be rationally applied to wounds The principle of lavage and staining is a sound one the apparatus devised is effective and gentian violet is in many ways admirably suited for this particular purpose

TECHNIC

(*a*) *The Apparatus*—This consists of a system of connecting chambers to be interposed between a pressure-and-suction pump, on the one hand, and the aspiring needle which is to be inserted into the joint on the other The method of attachment of pump and needle is illustrated in Figure 3 If an electric pump is at hand which will furnish both suction and pressure, the use of the apparatus is somewhat simplified, but this is not necessary and the Potain syringe as illustrated is quite adequate The caliber of all tubing and stopcocks is one-fourth inch (inside measurement), so that any material which can be aspirated through the largest needle that can be used will readily pass into or out of the apparatus

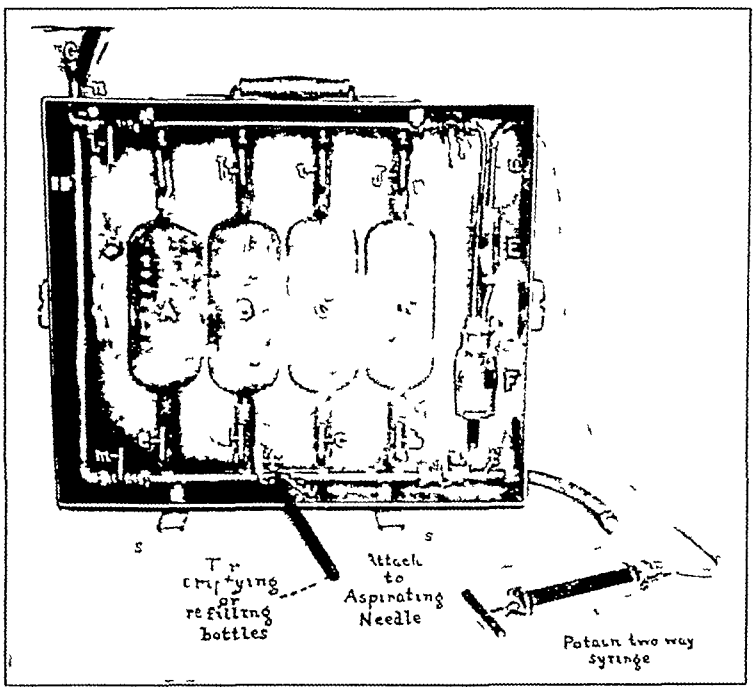

Fig 3—Apparatus set up for use The lettering is described in the text

(*b*) *Sterilization*—The funnel (*G*, Figs 2 and 3) is removed by unscrewing from its retaining socket and attached to the vent (Fig 3 *n*) Stopcocks *m*, *c*, *g* and *l* are opened a 1 1000 solution of gentian violet is poured into the funnel and it runs into bottle *A* Stopcocks *g* and *e* are closed and stopcocks *d* and *h* opened Salt solution is poured into the funnel and bottle *B* is in this way filled While these two bottles are being filled stopcock *l* must be left open to allow the escape of air through the vent *o* All stopcocks are now closed the funnel replaced in its socket (Fig 2 *G*) the lid applied (Fig 1), and the apparatus sterilized in the autoclave[4]

(*c*) *Technic of Lavage and Staining of a Joint*—The apparatus is shown set up ready for use in Figure 3 The lid has been removed, the funnel screwed into the vent, *n*, the folding supports *s*, unfolded and rubber tubes attached to outlets *t*, *u* and *v* Longer tubes than those illustrated will of course be needed, merely the method of attachment is shown in the illustration

After cleansing and sterilization of the skin with tincture of iodin the parts are covered with sterile sheets leaving exposed an area about 5 cm in diameter where the needle is to be inserted In this area sufficient 2 per cent procain is injected subcutaneously to anesthetize the skin and underlying tissues completely A large caliber needle of the type represented in Figure 4 is then inserted into the joint[5] A needle with smaller bore than this should not be used when the larger joints are treated, as it is essential that the needle be sufficiently large to allow the fibrin clots within the joint to pass through it For smaller joints such a needle is of course out of the question

The point of the needle should be very sharp and it should be pushed quickly into the joint Some discomfort will be experienced by the patient as the needle passes through the synovial membrane, but, as a rule, the rest of the operation is almost painless

After the needle has been inserted stopcocks *a* *b*, *j* and *l* (Fig 3) are opened and suction applied with the Potain syringe The fluid within the joint runs into the bottle *D* This fluid is kept for the bacteriologic examinations the bottle being removed from the apparatus by simply applying small clamps to the rubber tubes *q* and *r*, and lifting it out

When the fluid has been removed from the joint in the manner indicated, stopcocks *b* and *j* are closed, stopcocks *d* and *h* opened and pressure is applied with the pump Salt solution from bottle *B* is thus forced into the joint This should be put in in an amount sufficient to distend the joint and thus reach every nook and cranny of the cavity In the knee the completeness of distention is readily recognized by the prominence of the subquadriceps bursa, this joint usually holds about 75 to 100 c.c. It is interesting to note that the distention of the knee in the manner indicated has usually caused no pain

In the first cases the joint was anesthetized by the injection of procain but this procedure was found to be unnecessary It is true that none of the cases treated was extremely acute, and possibly if this had been the case a general anesthetic would have been necessary But it is certainly possible to distend a moderately inflamed knee until the subquadriceps bursa stands out like a drum without causing any pain This observation seems to indicate that the common notion that the pain in an inflamed joint is due to distention must be considerably modified

When the joint has been thus distended with salt solution, stopcocks *d* and *h* are closed stopcocks *c* and *i* opened and suction applied Salt solution mixed with pus from the joint

4 Of course the bottles must not be entirely filled with the fluids Room must be left for the expansion which will occur during sterilization

5 The illustration represents only the type of needle used A modification of the point and of the method of closing the opening for the obturator—which make it easier to insert and simpler to use—is now being worked out

flows back into bottle *C* This lavage from bottle *B* into the joint and back into bottle *C* is repeated until the fluid returns perfectly clear

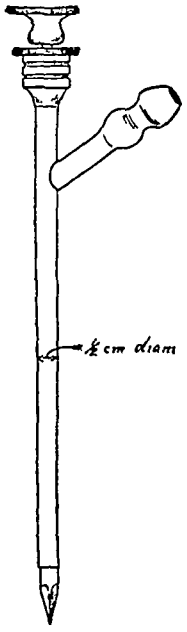

Fig 4 —Type of needle used for lavage of joints A modification of this needle is now being made which renders it more effective

Stopcocks *e* and *g* are then opened, pressure is applied, and the gentian violet from bottle *A* is thus forced into the joint to distention The dye is left in the joint for fifteen minutes It is then withdrawn into bottle *C* by arranging the stopcocks properly and applying suction That the synovial membrane is in this manner stained down to the subsynovial tissues has been shown by an experiment on a living human being[6]

A smaller amount (about half the joint capacity) of 1 10000 gentian violet is then injected into the joint in the manner already indicated, and this is left in the cavity

The needle is withdrawn rapidly, a dry gauze square pressed against the puncture hole, and a dry dressing applied A flannel bandage is placed over the dressing light pressure being used The knee is kept quiet for two or three days, and then the dressing is removed It will be found very slightly tinged by the stain, but the puncture will be found to have closed and will give no further trouble

If, during the operation, it is found necessary to empty any of the bottles of washings or fill with salt solution or gentian violet, this may be done through stopcock *f*

(*d*) *Cleansing of the Apparatus* — All the bottles are easily removed by simply lifting them out and the metal tubing may be cleansed by fluids poured into them through the funnel inserted at *o* or *n* (Fig 3)

65 Central Park West

BRANCHIAL CYSTS AND FISTULAS*

P K GILMAN M D
SAN FRANCISCO

In man, four pairs of gill pouches develop from the sides of the pharynx during the early part of the third week of intra-uterine life Beginning with the anterior pair, the others appear in regular order as elongation of the pharynx allows These pouches are lined with entoderm derived from the pharynx, and expand until the ectoderm is reached In the lower forms rupture, followed by fusion of entoderm with ectoderm, occurs and there are formed the gill clefts In man, this rupture does not take place, but the germ layers separating each pouch proliferate freely, forming columns separated from one another by the pouches These columns are the branchial arches, covered by cylindric epithelium of entodermal origin

As the embryo develops, certain of these clefts and arches disappear, others persist and result in adult structures Lateral cervical cysts and fistulas result from improper obliteration of the second cleft, median fistulas from persistance of a portion of the ductus thyroglossus The terms lateral and median are applicable only to the course of the sinus and not to the location of the external opening Again, the position of the external opening does not determine the cleft from which the tract arose, as this position may vary within considerable limits Wherever the external opening is, however, apparently all branchial fistulas connect at their inner end in the region derived from the second branchial cleft, near the tonsil or in the lateral wall of the pharynx

The surface opening of a branchial cleft fistula may lie at any point in the front of the neck between the inner border of the sternomastoid muscle and the midline, and at a level not above that of the hyoid bone or below the suprasternal notch In our two cases the opening has been small and has manifested itself a short distance above the sternoclavicular articulation

Fistulas may be complete with both an external and an internal orifice When the latter is present it occurs near the tonsil or in the lateral wall of the pharynx In the blind or incomplete type, the opening is single and connects either internally with the pharynx or externally with the skin of the neck The extent of each type varies within quite generous limits

Cyst formation occurs in a persistent portion of this embryonic structure This may develop as such from the start in a portion of the cleft that has failed to obliterate and does not connect with either the pharynx or the skin On the other hand, just as an incomplete fistula may become transformed into a complete fistula by perforation of the closed end, or a complete become an incomplete one by closure of either end, cystic dilatation may result from a sealing of the lumen with subsequent retention of secretion Even with the opening patent, dilatations occur and may be extensive and complicated

Fig 1 (Case 1) —Anteroposterior view of injected tract

The route followed by branchial cleft fistulas is apparently a definite one and determined developmentally In the lateral region of the neck the tract between the external opening and the digastric lies on the deep fascia superficial to the sternohyoid muscle Passing beneath the digastric muscle, it ends near the tonsil or enters the lateral pharyngeal wall after cross-

6 Churchman J W Footnote 1 third reference Figures 4 and 5

* From the Surgical Clinic Leland Stanford Junior University School of Medicine

ing the carotid bifurcation, the glossopharyngeal and the hypoglossal nerve This complicated course and intimate association with important structures renders removal of the fistula a difficult task, not to be approached lightly

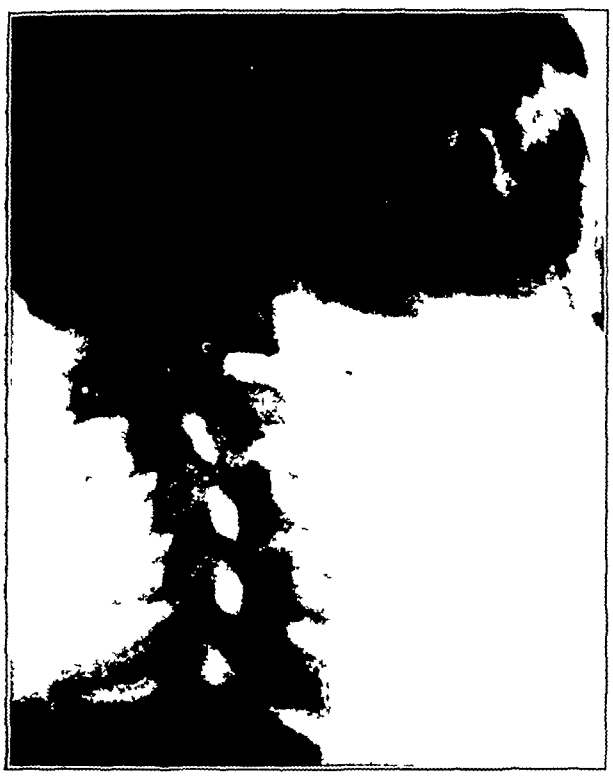

Fig 2 (Case 1) —Lateral view of injected tract

Microscopically, the structure of branchial fistulas is constant The wall consists of connective tissue arranged in layers about the lumen In this wall run the blood vessels, often in considerable number The lining epithelium may vary from squamous to cylindric depending on its point of derivation, both types having been described as occurring in the same fistula A more or less clear viscid fluid is given off from the lining This fluid may become greatly modified by inflammatory processes, as may also the lining epithelium itself

Fistulas of branchial origin are present at birth in contradistinction to thyroglossal fistulas which however may manifest themselves at any time after birth They are practically always unilateral, and affect most commonly the right side of the neck The presence of either fistulas or cysts may remain undiscovered for a long period, as they cause little or no discomfort unless the secretion from the fistula is sufficient to prove annoying by its quantity or to cause irritation of the skin surrounding the external opening The discovery of a cyst is usually accidental, the presence of one of considerable size being not incompatible with apparently normal function

If any doubt as to the diagnosis exists, a fistula may be injected with an opaque paste Stereoscopic plates will then show the extent and course of the tract (Fig 1) when the opening is external A probe is passed with difficulty and may readily penetrate the wall

In the treatment of fistulas and cysts, nothing short of complete excision of the structure is efficacious It must be complete, or a recurrence will surely follow from even a minute portion of the wall Attempts to secure obliteration of the structure by injection of destructive solutions is not only unreliable but may be dangerous

REPORT OF CASES

CASE 1.—*Branchial cleft fistula, incomplete external type, right*—R M, an American schoolgirl, aged 13 years, was admitted to the clinic complaining of a discharge from an opening low down on the right side of her neck The family history was negative two sisters and one brother presenting no apparent abnormalities The past history was negative except for a mild attack of measles during the patient's fourth year The child seemed of average mental and physical development, showing no other abnormality

The patient stated that she had had a discharging sinus as long as she could remember The discharge varied in amount and character at times being clear and white, at others thick and yellow For days at a time the opening apparently closed and was represented by only a small depression This depression later pouted at its central point burst and discharged a considerable amount of thick fluid The amount of discharge decreased during several days until finally, before closure again took place, only a few drops of material were evident This periodic closure and reopening of the fistula did not take place with any regularity

With the cooperation of Dr Chamberlain of the roentgen-ray department, a few cubic centimeters of a thin suspension of bismuth were injected into the opening in the neck and sealed in by means of a small pad of gauze held over the opening by adhesive plaster Stereoscopic plates were then taken and demonstrated beautifully the exact relations of the tract in its course from the skin opening to its point of origin in the lateral wall of the pharynx near the tonsil (Figs 1 and 2)

At operation the entire tract, still containing the injection material was exposed through an incision medial to and paralleling the right sternomastoid and extending from just below the angle of the jaw to and surrounding the opening This incision first isolated the depression bearing the sinus opening which was then kept closed in a clamp By exerting traction on this clamp the tract was readily brought into view at any time, and the contained opaque material rendered its

Fig 3 (Case 2) —Cyst hemisected contents removed from one half

identification an easy matter Blunt dissection served to isolate it, and it was removed entire up to and beyond its point of origin in the pharyngeal wall the dissection being carried well up to the base of the skull

The wound healed kindly after removal of a small drain of rubber tissue at the end of twenty-four hours

CASE 2—*Cyst of branchial cleft, right*—A man, aged 25 American, referred by Dr Mark H Woolsey, in whose immediate family both diabetes and tuberculosis were present, was undernourished until his nineteenth year when, following an abdominal operation, he began to take on weight He had suffered from repeated severe attacks of tonsillitis until the tonsils were removed recently One year before I saw him, the patient noticed accidentally a swelling below the angle of the jaw on the right side of the neck The lump at times seemed to become smaller, but had on the whole gradually become larger until the present time Removal of the patient's tonsils two weeks before this admission produced no change in the swelling The swelling had produced no subjective symptoms

The general examination of the patient was negative The neck showed a prominence below the angle of the jaw on the right side, over which the skin appeared normal Examination of the throat was negative The neck swelling was about 10 cm in diameter, was prominent, and fluctuated giving on palpation an impression of a cyst with thin walls containing thick, semifluid material under moderate tension The out-

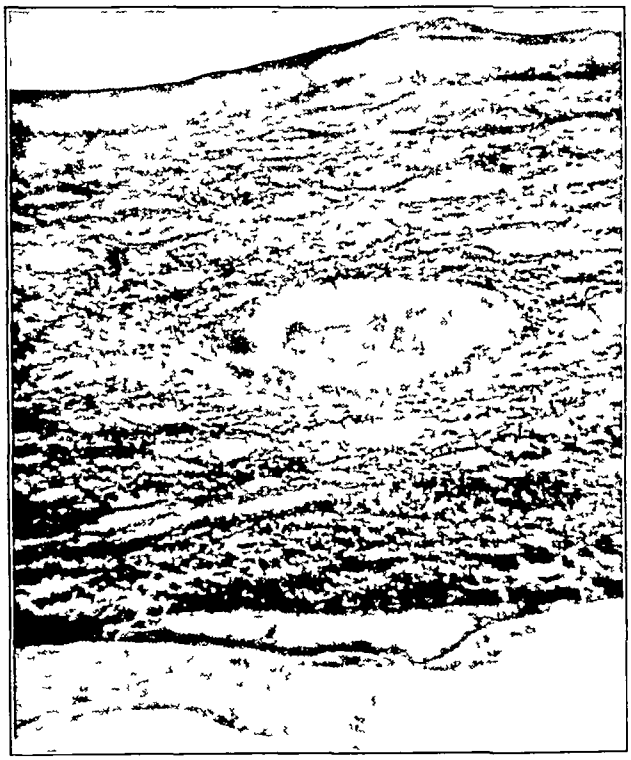

FIG 4 (Case 3)—Cyst wall objective A (Zeiss) ocular 2 bellows length 10½ inches

lines of the swelling were indefinite and it was evidently covered not only by skin and subcutaneous tissue but also by several deeper layers

Under local anesthesia, 1 per cent procain being used, a transverse incision about 3 inches long was made over the swelling at its widest point The sternomastoid muscle was retracted posteriorly the stylohyoid was drawn forward and the cyst exposed lying upon the wall of the pharynx and distorting the posterior belly of the digastric and the styloglossus The cyst was shelled out by blunt dissection and a mass dissection made of the tissues extending upward along the pharynx to the base of the skull (Fig 3) The wound healed promptly

CASE 3—*Branchial cleft fistula, incomplete external type, right*—M B, a schoolgirl aged 16, came to the surgical clinic because of a discharge from an opening low down on the right side of the neck The family history was negative, the past history included measles, scarlet fever and severe tonsillitis According to the patient's mother a small opening was first noticed in the right side of the child's neck when she was 3 years old This had discharged a thin, greenish-yellow mucus ever since Formerly the discharge was not constant but lately it had occurred every day, if only a few drops The patient stated that she could feel the mucus gathering," and that by then pressing on her neck above the opening she could force out at times half a teaspoonful of fluid

General examination of the patient—a tall, thin, well developed girl—was negative To the right of the median line between it and the anterior border of the sternomastoid and about 2 4 cm above the sternoclavicular articulation, was a small, almost pin-point opening at the summit of an elevated tag of tissue Pressure above this opening for some distance caused a further protrusion of the tag From the small opening was constantly exuding a yellowish mucus a drop at a time Harder pressure on the neck up under the angle of the jaw caused a spurt of the same material

This case was practically similar in all its features to Case 1, and was treated in the same manner The tract followed the course described above and was removed entire the tissue adjoining the pharynx and well up to the base of the skull being excised to prevent any possibility of recurrence

STRUCTURE OF SPECIMENS

Examination of the specimens reveals a constant structure The lining of these cysts or fistulas consists of stratified columnar epithelium, varying at different points in the number of cell layers No cilia are present Beneath the epithelial layer occurs in our specimens a more or less unbroken layer of lymphoid tissue Nodules with germinal centers are encountered scattered throughout Surrounding this is the supporting layer, made up of strands of fibrous tissue rich in areolar connective tissue spaces of large size These support a rich network of arterioles and capillaries Adipose tissue is found scattered in irregular areas in the wall of these structures, and more or less round cell infiltration is present, especially along the blood vessels

350 Post Street

HEMATEMESIS AND MELENA IN CHRONIC APPENDICITIS

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In presenting this article, devoid of laboratory and postmortem work, as it is, may I be pardoned for giving the clinical facts without any scientific substantiation? The reason these are not presented is that I did not and still do not know how to prove the cases excepting by clinical facts and the results accomplished by operation, sufficient time having elapsed to suggest definitely that in all probability we were dealing with cause and effect

Dieulafoy,[1] whose writings and textbook of medicine should be as well known as Osler's and Strumpell's, says

> There is another factor which must be reckoned in appendicitis than the infective lesions It is the toxic for experiments in the laboratory have confirmed the clinical studies If I am not mistaken, it was from the rostrum of the Academie that the idea of toxic appendicitis was first well established In this we consider albuminuria, icterus and hematemesis The vomiting noticeable in appendicitis may be caused not only by the appendicitis or the concomitant peritonitis but may also be due to toxic gastritis, accompanied in some cases by erosions of the stomach In such cases blackish streaks will be seen in the vomited matter, indicating slight hema-

1 Dieulafoy Textbook of Medicine 1 751 1914

temesis Only too often, however, repeated attacks of hematemesis occur and are of exceedingly grave prognosis I have called them appendicular vomito negro

Under the latter term he states, further

I do not refer to slight hematemesis which is only an epiphenomenon, and may be lightly passed over On the contrary we usually find severe attacks of hematemesis The black vomit may amount to one-half pint of blood the attacks may be repeated and the patient may die from hemorrhage Ecchymotic patches are found on the mucosa of the stomach and erosions which are of hemorrhagic origin and the result of appendicular toxins My researches had taught me that the attacks of hematemesis consequent on these toxi-infections are due to ulceration of the arterioles ramifying under the muscularis mucosæ, being identical in the gastric erosions which follow strangulation of the gut

In 1906, a woman, aged 22, interested me

In her sixteenth year she had her first attack of hematemesis while riding a horse in the park At the time she was in the second day of menstruation, which had occurred regularly from its onset two and one-half years before She became faint, lost control of her faculties fell to the roadway and vomited a large amount of blood in a few moments At first it was judged that some injury had taken place in the fall although there was no evidence of any on careful examination After a few days it was suggested that the stomach hemorrhage preceded and was the cause of the fall although why it occurred was not discernible at the time unless it was bound up in some way with the physical activity of riding at the menstrual time Three months afterward another hemorrhage took place, and this was followed by four hemorrhages in seven months one of them reducing her markedly In the meantime she had been in the hands of three well known colleagues and thrice judged as having an ulcer On the occasion of her second examination by me the only finding possible was a diseased appendix made entirely by roentgen ray There was no past history of attacks or any suggestions on local physical examination Her abdomen was explored by operation and nothing found but a diseased appendix (a very moderate degree of chronic interstitial process) and a deep blush of the pyloric end of the stomach The appendix was removed and now thirteen years have elapsed There have been no more hemorrhages, and the young woman has been entirely well

Since that time I have seen fourteen cases—making fifteen in all—twelve in women averaging 27 years of age and three in men averaging 25 years of age In all but four there was a negative appendicitis history and in one of these it was only mildly suggestive The diagnosis of disease of the appendix was made mostly by roentgen-ray findings in all of them because of distortion of its caliber or course and less often by studies of suggestive peristaltic phenomena in the stomach The physical examination was not conclusive except in two persons Some of these patients had been in the hands of excellent men and treatments for ulcer occurred in all but one, who was supposed to have hepatic cirrhosis to account for the stomach bleeding All had frank hemorrhage histories, and here I might add, many more cases in which the diagnosis was made by finding constantly small amounts of blood in stomach contents of test meals and positive chemical tests of feces plus roentgen-ray examination Only the frank hemorrhage cases are reported here These cases gave no ulcer histories, but in seven in which roentgen-ray examinations of the stomach had been made, definite ulcer diagnosis was made in five, and four of these were by the best roentgenologists in the country In the patients in our charge, disease of the appendix as the cause of hemorrhage was judged in all, all were operated on, all had some distinctive pathologic condition of the appendix and no gastric lesions, and all of them at the time of operation had the pyloric blush The last one on whom I am here reporting was operated on more than three years ago Not one had a hemorrhage from the stomach after the appendectomy

At the Carpenter lecture, Oct 21, 1920, Sir Berkeley Moynihan[2] drew attention to the pyloric blush in these appendix cases He stated that it was simply a blush, but really it is more than that The appearance of the stomach from the peritoneal side is one of congestion without visibly enlarged small vessels Sometimes the blush includes the first part of the duodenum, but always it gives one the impression of an accompanying edema in the stomach wall or under the peritoneum Specimens of this stomach tissue dehydrated and prepared for section are unsatisfactory for study The bogginess of the tissue disappears in preparation This process encircles the whole stomach, sometimes extending to the pars media of the stomach, where it gradually fades out

Moynihan also failed to give Dieulafoy credit for having drawn attention to this pyloric blush many years before he did[3] That such a contribution came from a French source even an Englishman should recognize particularly when there were medical men who were aware of this for over twenty years of time before he mentioned it

In brief, then, there are instances of disease of the appendix which, perhaps for toxic reasons, can cause from slight small bleedings to intermittent frank hemorrhages of alarming amounts of blood from the gastric mucosa, which hemorrhagic condition requires appendectomy for its permanent and complete cure And in all hematemesis cases, possibility of disease of the appendix should be considered along with the other factors in which bleeding of the stomach occurs

As is well known the course of enterotyphlocolitis varies The condition I shall describe does not fit into the varied yet well understood clinical picture of chronic colitis Perhaps its one identical symptom is constipation, although a diarrhea may be present The characteristic pains are absent The hypochondriac, melancholic neurasthenic and reflex symptoms are not observable, and the mucus, with or without stools, is also not present There are no crises of mucous colic attacks and no intermittence to the symptoms

The first case I saw, was in a man, aged 34

The family history and personal history were negative After the onset of a constipation lasting two years, he began passing free blood with the stool and often blood alone With this there took place an indefinite distress in the abdomen with increased flatus and eructations His weight ran down from 180 to 109 pounds in a year, with occasional gains, which he lost each time The physical examination was negative excepting for an intensely congested friable and thickened rectal mucosa as high up as one could see, which was well within the sigmoid There was no evidence of true ulceration The small vessels were prominent, and the mucosa bled freely to the merest touch The roentgen-ray examination disclosed nothing significant which was confirmed the second time even the appendix being considered normal

The patient had three months of transintestinal lavages, twice a week with hypertonic solution, a high lactose starch and fat diet, and made a partial improvement The abdomen was then opened nothing abnormal being found other than

2 Moynihan G A B Gastric Ulcer and Its Treatment read before the New York Academy of Medicine Oct 21 1920
3 Dieulafoy Toxicite de l'appendicite (Academie de medecine, 1898 Clinique medicale de l'Hotel Dieu 1899 Lecture 17

the appendix and herewith is the pathologist's report of the appendix "Specimen 9 cm long and 1 cm in diameter The surface is free from acute inflammatory reaction or adhesions The wall is somewhat edematous and measures 4 mm in thickness The mucosa is thickened and hyperplastic The lumen contains a very small amount of fecal material In the gross there is no necrosis of the mucosa Microscopically, the mucosa is thickened, the stroma being very dense The lymph follicles are markedly swollen and hyperplastic The lumen contains hemorrhage, a mucoid material and some denuded cells from the mucosa The superficial layers of the mucosa are hemorrhagic There is a diffuse chronic inflammatory reaction throughout the wall The most striking change is the tremendous lymphoid hyperplastic and hemorrhagic condition of the mucosa and submucous layers"

This pathologic report answers perfectly for the fifteen hematemesis cases reported and for three more of hemorrhagic colitis that I have seen

Following the removal of this man's appendix, his colitis condition cleaned up in a week's time, there has been no more melena, and the rectal mucosa is continuously normal This, however, was not uniform in the other three colon cases It was in one more, but in the other two transintestinal lavages, diet, rest and medical attention were required before the rectal mucosa took on a normal appearance In each, however, a marked cessation of the bleeding with beneficial change took place in the rectal mucosa promptly following an appendectomy

In brief, then, it seems probable that the so-called hemorrhagic colitis may be a colon expression of an appendicemia, as is the pyloric blush in the stomach, that the removal of the appendix is advisable that the appendix should be removed as early as possible, because in long standing of the condition the benefit may be only partial, since the colon mucosa has taken on a residential condition from secondary infection, but that even in these when the appendix is removed medical treatments are distinctly more helpful toward a cure, and, lastly, that exclusion of the colon, as Lynch [4] advises, or appendicostomy or cecostomy, as Mummery and others suggest, is apparently not required in the successful handling of these cases

21 West Seventy-Fourth Street

RADIUM TREATMENT OF CANCER OF THE ESOPHAGUS

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Some of the most brilliant and satisfactory achievements of surgery are accomplished by resection of accessible portions of the alimentary tract for cancer This is notably true in the stomach and colon, when early diagnosis affords standard operative technic the proper opportunity Conversely, cancer of the esophagus, by its inaccessibility, has a dark chapter of mortality as the chief reward for heroic effort at surgical relief

Statistics as to frequency are not available, if, indeed, such exist I believe, however, that the total number of these neoplasms is much larger than is generally thought At the time I went into military service in 1917, I left five patients with gastrostomy tubes in place for feeding On my return in May, 1919, they had all died by extension of their cancers Recently I have had three cases under observation, and in one of these radium treatment is being used with apparent success

Radium is efficient in the destruction of cancer in direct proportion to the proximity of its application, and to the mass of the dose Fortunately, in cancer of esophagus, if timely diagnosis is made the applicator may be placed directly within the lumen of the neoplasm, if even a little water, or the patient's own saliva, can be swallowed It is for this class of cases that the present plan is proposed Years ago Samuel J Mixter of Boston found that, when a silk thread 5 or 6 yards in length was swallowed, and one end retained outside the mouth, the free end passed down into the intestine, and was held there with sufficient firmness to act as a guide for a perforated olive-tipped bougie in its passage through a stricture of the esophagus This method has been popularized in Sippy's clinic in the passing of perforated metal olives over a piano wire guide It is of great value in nonmalignant stricture In cancer it it followed by rapid increase in growth By its use we have a positive method of placing the radium capsules directly within the lumen of the esophageal cancer

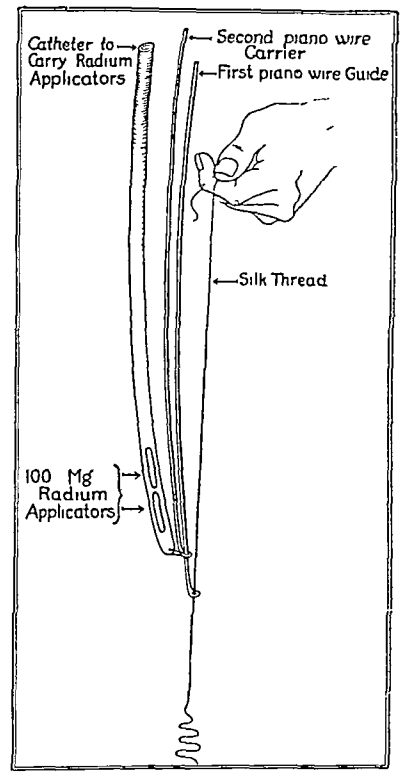

Fig 1 —Silk thread piano wire guide and rubber catheter containing radium applicators

Early diagnosis is of great importance Physicians should be more on their guard in this matter Persistent difficulty in swallowing, occurring in persons of middle age, is sufficient indication for a careful roentgenologic examination

Afflicted persons often neglect consulting a physician until the obstruction is nearly complete, and only liquids can be swallowed At this stage it is very easy to obtain the characteristic picture of esophageal stricture by roentgenography of a thick barium mixture If the patient swallows this while lying down, and at the moment of making the exposure the foot of the table is slightly raised, the lower portion of the neoplasm may also show in outline

Figure 1 is a detail drawing of the silk thread piano wire guide, and rubber catheter containing the radium applicators Figure 2 *A* shows the passing of the first piano wire guide over the taut silk thread Figure 2 *B* and 2 *C* are further steps in the procedure Figure 2 *D* shows the thread, the wire guide, the wire carrier, and the catheter that holds the radium applicators, while the patient is having a one hour treatment with 100 mg of radium

4 Lynch Diseases of the Rectum and Colon p 343

PROCEDURE

A 10-yard spool of the largest size of buttonhole silk twist is threaded on a small tape, and tied loosely around the patient's neck. A couple of feet may be reeled off the spool, and taken into the patient's mouth, and started with a swallow of water The thread should be fed from the spool slowly, only a few inches at a time, to avoid a tangle above the stricture By the next day 15 or 20 feet may have been swallowed, and the thread may even project from the anus It may now be drawn upward until quite taut, being held by the convolutions of the intestine The loop of the piano wire guide is now threaded on it, and while the thread is drawn taut, and then only, may the wire guide be safely passed through the stricture on the silk thread If the lumen is not sufficiently large, it may be increased by pushing down perforated shot and metal balls in increasing size, and then in a diminishing size, to dilate the lumen, and also permit safe withdrawal The radium applicators are pushed into a soft rubber catheter, and this is fastened to the loop of the second piano wire by a silk stitch This may now be pushed directly into the center of the carcinoma, and the proper dose and time treatment given

The position of the applicator is of the greatest importance To be efficient, the radium must be exactly in the center of

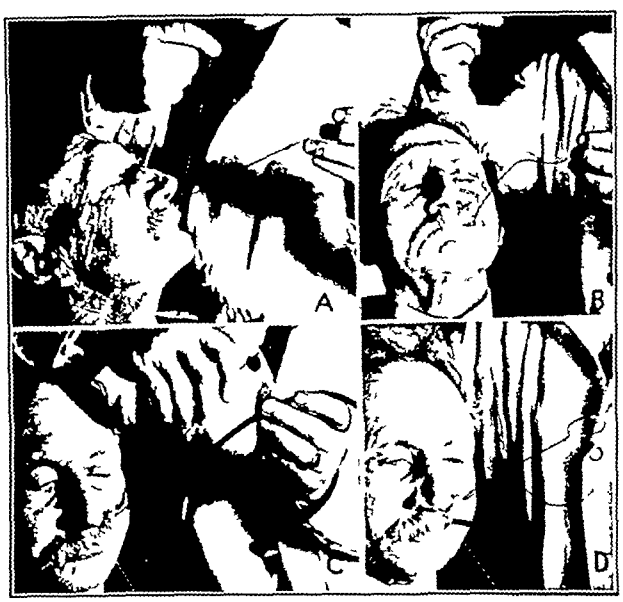

Fig 2—Method of procedure *A* passing of first piano wire guide over taut silk thread *B, C* further steps *D* thread wire guide, wire carrier and catheter while patient is receiving treatment

the mass At first the sense of resistance, as the end of the catheter enters it, may be sufficient Careful measurement on the first wire must then be made of the previously ascertained distance from the teeth which the second wire must be pushed to place properly the radium applicator It may be well to confirm this by a roentgenogram and by comparing it with the barium picture of the stricture When this point is definitely ascertained, a record of the distance from the teeth to the upper end of the wire should be made, for use in future treatment of the case

COMMENT

Treatment of cancer of the esophagus requires the cooperation of the surgeon with the roentgenographer and the roentgenologist It is the surgeon who must accept the responsibility of the correct placing of the radium applicators The radium treatment in these cases has been given by Dr Ralph C Walker

Cancer of the esophagus probably forms metastases rather slowly The procedure here outlined is logical, and offers the hope that one more fateful disease may at times have a favorable prognosis

SPECIFIC ACTION OF ATROPIN IN RELIEVING CERTAIN IRREGULARITIES OF HEART BEAT

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NEW YORK

Nothing has done more to dispel the therapeutic nihilism that was rife in the profession twenty years ago than the direct observation of therapeutic results

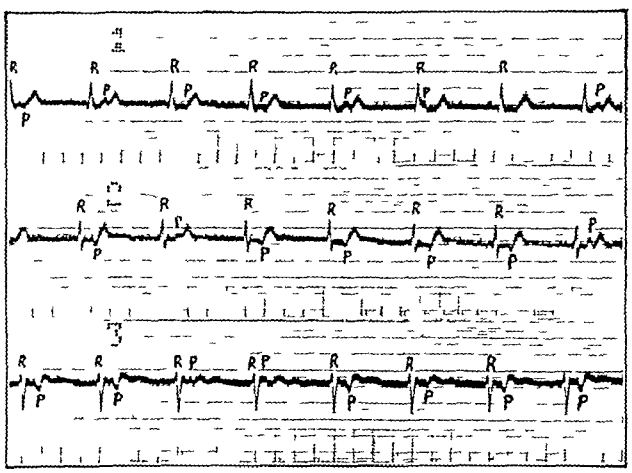

Fig 1 (Jan 31 1921)—Nodal rhythm The ventricles always contract first After the wave R and before T is the auricular wave P The auricles contract at the same time as the ventricles

in heart disease by instruments of precision, notably the electrocardiograph The case here reported illustrates the absolute effect of atropin in relieving a rare

Fig 2 (February 2)—Same as in Figure 1 but with slower rate

but nevertheless instructive condition No cardiologist encounters a case of true nodal rhythm often, but a woman suffering from this condition was referred to me last winter by Dr Louis Monk She had no characteristic clinical symptoms, for this is a disorder that cannot be suspected by its physical signs Her heart was regular, but she complained of much precordial distress and shortness of breath The pulse was regular, and rather slow Still, she complained of

consciousness of the heart beat The electrocardiogram showed a nodal rhythm This tracing was not carefully examined until after she had left the office, and when she came back, February 2, another electrocardiogram was taken, and 1/50 grain of atropin was administered and then another tracing was taken, which showed many normal beats Her physician was advised that atropin, not digitalis, was the proper remedy, and she was put on this with marked benefit The accompanying tracings were made at various stages The tracing of April 4 shows a normal heart beat The whole aspect of the patient has changed, and she expresses great satisfaction on her improvement The orthodiagram shows a fairly normal heart, considering the size and build of the patient

The whole story of the striking effect of atropin in relieving this condition is told by these pictures of the heart beat The P and R waves only are marked The large T waves are not lettered

In the record taken on January 31, when the patient first came to the office, the ventricles were regular and 72 to the minute The auricular waves, marked P, follow after the ventricular waves R, and so this is a true nodal rhythm In Figure 1 the P waves are sometimes downward and sometimes upward, so that they must start in different parts of the auricles at different times Those that are turned downward may be caused by the contraction being conducted backward to the auricles from the ventricles

In Figure 2, taken February 2, the heart action is the same as in the record of January 31, except that the ventricular contractions are a little slower The contraction is more frequently conducted backward from the ventricles to the auricles

Figure 3, taken, February 2, after 1/50 grain of atropin sulphate had been given by hypodermic injection, also shows many beats of the ventricle that are not

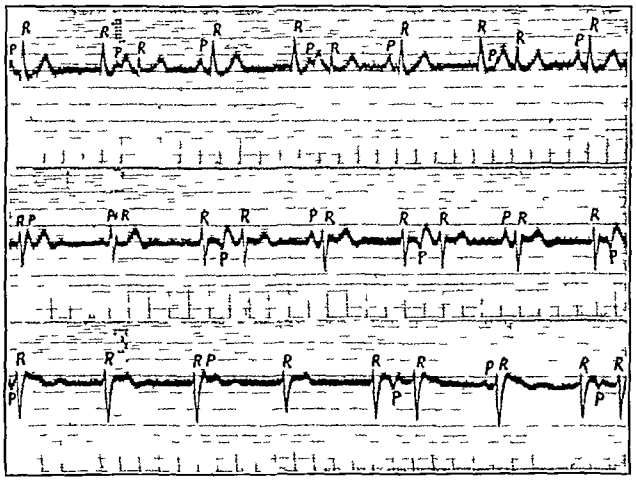

Fig 3 (February 2 after medication) —Sometimes the beats are nodal and sometimes of the normal type with the P wave coming before R

caused by beats of the auricle, but that start in the node These come sometimes singly and sometimes two or three in succession At other times the ventricles beat in response to the auricles in the usual way The time between the beats of the auricles varies When it is longer than the time between the beats of the nodal rhythm, then a nodal beat occurs first, when it is shorter, the beat of the auricle occurs and gives rise to a ventricular beat in the normal way

February 15, after the patient had been taking atropin for two weeks, the condition was very little different from that in Figure 3, except that the ventricles beat more often in the normal way after the auricles The nodal rhythm was slower and the auricular rhythm faster, so that the auricles usually beat first and controlled the heart

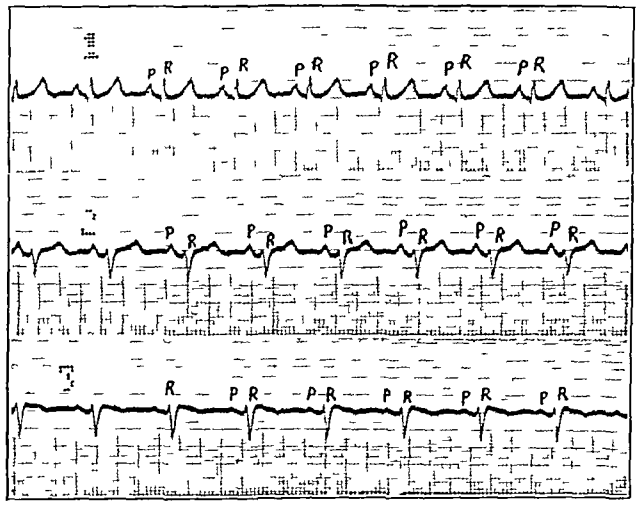

Fig 4 (April 4) —Normal rhythm the P wave always coming before R and the rate being faster

April 4, the heart beat had come to be perfectly normal Figure 4 was taken then With each beat the auricles come first and are followed by the ventricles after the usual interval

109 East Sixty-First Street

THE SPECIFIC PRECIPITIN REACTION OF THE LENS*

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It is a remarkable fact, discovered by Uhlenhuth and verified by others,[1] that the lens of different species gives the same immune reactions A lens antiserum, produced let us say by injecting a rabbit or guinea-pig with beef lens, will react in precipitation, anaphylaxis and complement fixation tests not only with beef lens but also with the lens of other mammals, of birds and amphibians With fish lens the reaction, however, is very faint We see that the specificness of the reaction is determined not by species as in the immune reactions of blood of serum proteins, as well as of bacteria, but by the organ from which the antigen is derived

So far the lens is the only clean-cut example we have of this organ-specificness as contrasted with species-specificness in antigen-antibody reactions In fact, so perfect is this lens-specificness that a lens antiserum

* From the John McCormick Institute for Infectious Diseases

1 Uhlenhuth Zur Lehre von der Unterscheidung verschiedener Eiweissarten mit Hilfe spezifische Sera Koch Festschrift 1903 p 49 Andrijew Ueber Anaphylaxie mit Eiweiss tierischer Linsen Arb a d k Gsndhtsamte **30** 450 1908 Kraus Doerr and Sohma Ueber Anaphylaxie durch Organextrakte (Linsen) Wien klin Wchnschr **21** 1084 1908 Uhlenhuth and Haendel Untersuchungen uber die praktische verwertbarkeit der Anaphylaxie zur Erkennung und Unterscheidung verschiedener Erweissarten, Ztschr f Immunitatsf u exper Therap **4** 761, 1909 Krusius Zur biologische Sonderstellung der Linse Ztschr f Immunitatsf u exper Therap **5** 699 1910 Ueber empfindlichkeitsversuch vom Auge aus Arch f Augenh **67** 6 1910 Konigstein Zur Biologie der Linse Arch f Augenh **68** 414 1911 Romer and Gebb Beitrage zur Frage der Anaphylaxie durch Linsen eiweiss Arch f Ophth **81** 367, 1912

reacts with the lens of the species, yes even of the very animal, that furnishes the serum, but not with any other proteins, and antiserums produced by injecting animals with blood or serum do not react with lens solutions

The observations on the immune reactions of the lens have been made by means of specific precipitation tests of lens solutions, study of the anaphylactic effects of reinjection of lens solutions in guinea-pigs previously injected or sensitized with such solutions, and complement fixation tests, associated of course in any case with proper control procedures

I have studied the precipitins that develop in rabbits on the injection of lens solutions in 0.9 per cent salt solution. The principal experiments so far have been made with approximately 10 or 20 per cent solutions by weight of beef, horse, rabbit, sheep and swine lens, removed with special care to avoid admixture with blood or serum. Rat lens and chicken lens seem to be more toxic, but I have not studied that phase in detail. As a rule, four or five injections have been given intravenously at four day intervals, first of 2 to 4 c.c. of solution, increasing gradually to between 12 and 16 c.c. the last time. The highest precipitin titer of the serum after such treatment appears to be reached about the eighth day after the last injection. Contrary to the experience of Uhlenhuth, it does not seem difficult to obtain strong antiserum, and all the tests tabulated were made with serums that would cause precipitates in lens dilutions of at least 1 5,000 and often much higher. The injection of rabbits with solutions of rabbit lens, however, does not seem to have the same antigenic effect—"horror autotoxicus"—as the injection of lens of other species. Contradictory results are reported on this point, and further study is required.

The tests are made by the contact method and the results read after one hour at room temperature. The accompanying table shows all the lens solutions used (beef, chicken, dog, guinea-pig, horse, human, monkey, rabbit, rat, sheep, swine) to react in the same way with beef, horse, sheep and swine lens antiserums, further, that none of these lens antiserums react with the blood serum of either the corresponding or any of the other species represented, and, conversely, that no serum antiserum reacts with any lens solution. The organ-specificness of the lens holds good throughout. The lens does not appear to contain any species-specific antigens.

The aqueous and vitreous humors appear frequently to contain lens substance, because in most instances these fluids in low dilutions or full strength react with lens antiserums. Uhlenhuth mentions that he obtained faint reaction with the vitreous and lens antiserum, but says nothing about the aqueous. These humors may react with serum antiserum also—not always—and then the law of species-specificness obtains. It is, of course, possible that in some of my specimens lens substance may have become mixed with either humor as a result of the handling incidental to the withdrawal of the humor, but I believe that in most instances this did not occur, as the withdrawal was made with special care to avoid undue pressure or suction.

The presence of lens substance in the vitreous and aqueous humors raises interesting questions in regard to the relations of these humors to the lens. Is the lens substance in the humors derived from the lens or on the way to be incorporated into the lens? If the last part of the question is answered affirmatively, what is the source of the lens material?

In the absorption experiments so far made the solution of any lens of those used in immunizing the rabbits removes all the precipitins from any of the lens antiserums mentioned, but here also further work is desirable. I may mention, too, that the serum of rabbits injected with extract of beef cornea reacts with beef serum, beef vitreous and beef aqueous, but not at all with beef lens or any other lens, indicating that the cornea contains species-specific proteins only.

LENS PRECIPITIN REACTIONS*

	Lens Antiserums				Serum Antiserums					
	Beef	Horse	Sheep	Swine	Beef	Horse	Sheep	Swine	Human	Normal Rabbit Serum
Beef lens	+	+	+	+	0	0	0	0	0	0
Chicken lens	+	+	+	+	0	0	0	0	0	0
Dog lens	+	+	+	+	0	0	0	0	0	0
Guinea pig lens	+	+	+	+	0	0	0	0	0	0
Horse lens	+	+	+	+	0	0	0	0	0	0
Human lens	+	+	+	+	0	0	0	0	0	0
Monkey lens	+	+	+	+	0	0	0	0	0	0
Rabbit lens	+	+	+	+	0	0	0	0	0	0
Rat lens	+	+	+	+	0	0	0	0	0	0
Sheep lens	+	+	+	+	0	0	0	0	0	0
Swine lens	+	+	+	+	0	0	0	0	0	0
Beef aqueous	+	+	+	+	+	0	0	0	0	0
Dog aqueous	+	+	+	+	0	0	0	0	0	0
Human aqueous	+	+	+	+	0	0	0	0	+	0
Rabbit aqueous	+	+	+	+	0	0	0	0	0	0
Sheep aqueous	+	+	+	+	0	0	+	0	0	0
Swine aqueous	+				0	0	0	+	0	0
Beef vitreous	+	+	+	+	+	0	0	0	0	0
Dog vitreous	+	+	+	+	0	0	0	0	0	0
Human vitreous	+	0	+	+	0	0	0	0	+	0
Monkey vitreous	+	+	+	+	0	0	0	0	0	0
Rabbit vitreous	+	+	+	+	0	0	0	0	0	0
Rat vitreous	+	+	+	+	0	0	0	0	0	0
Sheep vitreous	+	+	+	+	+	0	+	0	0	0
Swine vitreous	+	+	+	+	0	0	0	+	0	0
Beef serum	0	0	0	0	+	±	+	0	0	0
Horse serum	0	0	0	0	±	+	0	0	0	0
Human serum	0	0	0	0	0	±	0	0	+	0
Monkey serum	0	0	0	0	0	0	0	0	±	0
Sheep serum	0	0	0	0	+	0	+	0	0	0
Swine serum	0	0	0	0	±	±	±	+	0	0
Rabbit serum	0	0	0	0	0	0	0	0	0	0

* All lens antiserums active in all lens dilutions of 1 5000 at least. Serum antiserums active in homologous serum diluted from 1 4000 to 1 12,000. In some cases these anti erums react with the serum of related species. + strong reaction ± slight reaction 0 no reaction

SUMMARY

The precipitin reactions of the lens of certain mammals (and of the chicken) are lens-specific and the lens, at least of the mammals in question, does not appear to contain any species-specific precipitinogens, hence the lens protein may be regarded as chemically distinct and as identical in diverse species. Perhaps further studies by means of lens-specific reactions may prove of interest.

Hospital Case Records.—The matter of case records is of such great importance that I deem it proper to consider it first. A close analysis of the reason for keeping accurate case records cannot help but reveal the rapidly extending field opened up by the recent developments along these lines. The amazing changes which a reform in the records of any hospital will effect will be sufficient reward to an institution making the effort. To any hospital that has lost itself in a maze of confusion and is floundering in the slough of despondency, let me advise them to try the following scheme. Have a "records committee" formed from the staff and management, set aside a room to be devoted to the business of records alone, appoint a registrar, employ a stenographer to be trained as a medical statistician, have weekly committee meetings and plan a definite campaign.—*Hospital Progress* 2: 43, 1921.

SPLENECTOMY IN SPLENIC ANEMIA AND BANTI'S DISEASE*

WILLIAM J MAYO, M D
ROCHESTER, MINN

Splenic anemia is characterized by an enlarged adherent spleen, a secondary type of anemia, and leukopenia The etiology of splenic anemia is unknown, rather, let us say, if we know the cause the condition is not called splenic anemia, but is considered part of the disease of which it is one of the manifestations This syndrome in children was described by Gretsel, in 1866, and various observers had called attention to sporadic cases, not until the publication of Osler's paper, in 1900, however, was the attention of the American medical profession drawn to the disease, and our knowledge of it may be said to date from that time

While splenic anemia has quiescent periods, it eventually terminates in death, often from an intercurrent malady which the condition invites The anemia is subject to considerable variation When extreme, it is usually the result of intercurrent gastric hemorrhages Leukopenia is a rather constant feature, the white cell count is usually well under 5,000, the average being 3,500, although occasionally it is much higher We have operated on several patients in whom the white cell count had run rather steadily above 10,000 Pathologically the spleen shows generalized fibrosis and thrombophlebitis with atrophy of the pulp cells

In 1883, Banti described an enlargement of the spleen associated with portal cirrhosis of the liver He believed that the changes in the spleen, which consisted of a gradual conversion of the parenchyma into fibrous tissue with atrophy of the cellular elements and degeneration of the blood vessels, were the result of an infection The fact that an unknown cause is essential to the diagnosis at once shows the lack of essentials in Banti's understanding of the subject Most observers are now of the opinion that Banti's disease is merely a late stage of splenic anemia, presuming that the etiologic agents which are removed by the spleen from the blood stream affect not only the spleen, but also the liver terminally As we discover one by one the various initiating causes of these changes in the spleen the number of cases of Banti's syndrome is reduced Banti not only laid stress on unknown etiology, but also on the terminal changes in the liver It may be stated, however, that the type of cirrhosis produced is portal, showing that the cause of the disturbance is carried to the liver through the portal vein The evidence at hand leads to the belief that both the anemia and the cirrhosis of the liver are the result of the pathologic condition of the spleen, rather than of toxic material supposedly removed from the blood and that the exciting cause of the splenomegalia may have little to do with the changes in the blood and liver As there is enlargement of the spleen in many cases of primary cirrhosis of the liver, there is need for more accurate observation in order to clear up points which must otherwise be conjectural At the present we may argue that if the discovery of an enlarged spleen is made first, and of the portal cirrhosis later, the condition is splenic anemia On the contrary, if there is a history of alcoholism or pepper addiction and the condition of the liver is noticed first and that of the spleen later, we may say that the trouble is primary in the liver and that the splenomegalia is secondary to the liver changes In the two extremes this method of classification will answer clinically, but unfortunately in many instances the history and physical findings are confusing and indeterminate

Warthin and Dock have made careful observations in some cases of splenomegalia of the splenic anemia type which had progressed to the secondary condition with the changes in the liver described by Banti In the cases presented by them are splenic fibrosis, hepatic cirrhosis, stenosis, and calcification of the portal system causing passive venous chronic congestion and hyperplasia of the hemolymph nodes which are closely associated in function with the spleen Warthin and Dock lay great stress on thrombophlebitis and believe that the generalized thrombosis is secondary to portal thrombophlebitis and that this condition itself is the result of chronic infection Warthin summarized the findings thus "Splenic anemia and Banti's disease must be regarded as coordinated symptom-complexes and not individual disease entities," a statement with which I quite agree

The spleen is enlarged in cases of biliary cirrhosis also, especially in the mixed forms I have been impressed with the futility of the morphologic classification of the hepatic cirrhoses There are many cirrhotic pictures, just as there are many patterns of wall paper or carpets Brushing aside the familiar classification of the cirrhoses of the liver in which variations in the morphology lead to unnecessary confusion, there are fundamentally but two hepatic cirrhoses

1 Portal cirrhosis, in which the toxic material reaches the liver by way of the portal vein and in which the connective tissue is deposited around its branches Death is caused by portal-circulatory obstructions, ascites, and gastro-intestinal hemorrhages without jaundice until shortly before death

2 Biliary cirrhosis, caused by infection of the biliary ducts in which the connective tissue is deposited around the ducts and causes jaundice, but without ascites or hemorrhages until shortly before death

We understand best the atrophic type of portal cirrhosis of Laennec, but there are many cases, probably half or more, in which the liver is typically cirrhotic, is not decreased in size, but is even increased, as seen in the beer drinker's liver in contradistinction to the hobnail, or gin livers While the liver in portal cirrhosis may be large or small, it usually is rough, at times, however, deposits of fat smooth out the surface roughness and lead to confusion of type

REDUCTION OF THE PORTAL CIRCULATION BY SPLENECTOMY

In portal cirrhosis the spleen may play a prominent part in the etiology, and splenectomy in properly selected cases may be of great benefit By splenectomy not only the supply of toxic material, if there be such, is cut off from the general circulation but also the portal blood stream is reduced by subtraction of the amount of blood poured into the portal vein from the spleen, about 25 per cent of the total under normal conditions After the removal of some of these huge spleens an enormous reduction of the portal circulation takes place, so that the hepatic cells may be relieved of a sufficient overload to enable them to function normally, and moreover the liver under favorable circumstances

* Read before the Section on Obstetrics Gynecology and Abdominal Surgery at the Seventy Second Annual Session of the American Medical Association Boston June 1921

has the power of regeneration Our experience with portal cirrhosis of the liver secondary to splenic anemia encouraged us to remove the spleen in some cases of primary portal cirrhosis In all, eleven patients with portal cirrhosis were subjected to splenectomy with four deaths in the hospital All of these patients were in the last stages, with ascites, hemorrhage from the stomach, and so forth Only in such grave cases did we consider the operation justifiable After removal of the spleen the omentum was spread in the denuded splenic area and fastened in the abdominal wound in order to give the additional benefits of the omentopexy of Talma-Morison and Drummond which we have occasionally found of great benefit in relieving the ascites and other evidences of portal obstruction Four of these patients were markedly benefited One patient is now alive after five years In early operations the operative mortality would be small and the end-results much better

Biliary cirrhosis usually of the obstruction type of Adami must be considered in this connection As pointed out, the connective tissue in this disease is deposited around the biliary ducts from infection, commonly from the extension upward of common duct infections from gallbladder disease Infection from obstruction pancreatitis extending to the biliary ducts is also an occasional source of biliary cirrhosis Sometimes the infection of the duct is focal in origin, and is carried to the biliary channels by the blood stream The biliary cirrhosis may be complicated by portal cirrhosis, perhaps secondary to the pathologic condition of the spleen which has been caused by, or is a part of, the primary biliary cirrhosis It is difficult in some cases of biliary cirrhosis to exclude latent hemolytic icterus as a contributing factor In twenty of thirty-two cases of hemolytic icterus in which we performed splenectomy, gallstones were present, usually bile pigment stones the result of the enormous amount of pigments derived from the unnecessary red blood cell destruction in the spleen Splenectomy was performed in six cases of primary biliary cirrhosis with greatly enlarged spleens In these cases the cause of the biliary infection, so far as could be learned, had been removed previously, such as gallstones, and focal infections, without marked relief All of the five patients who recovered were greatly benefited, three are alive two years, two, three years, and one, five years after splenectomy

Hemorrhage from the stomach, so disturbing a feature of splenic anemia, is not always relieved by splenectomy, but is greatly reduced in frequency, and the majority of the patients never have hemorrhage after splenectomy There are two known causes for hemorrhage of the stomach in these cases, first, esophageal and gastric varicosities, the result of portal obstruction, and second, toxic conditions, undoubtedly hepatic in origin, which result in extensive superficial gastric mucous erosions of the Dieulafoy type The prospects of relief by splenectomy, however, depend not only on whether the spleen is the primary cause, but especially on the condition of the liver We have seen patients with very advanced cirrhosis of the liver who have been relieved of the ascites and gastric hemorrhages and have recovered marvelously after removal of the spleen In one such case, the patient, a physician, operated on by C H Mayo, had what appeared to be a terminal condition of splenomegalia and hepatic cirrhosis He is well and in active pursuit of his profession more than eleven years after splenectomy Balfour, in an article on gastric hemorrhages of splenic origin, reports in detail a case in which the removal of a moderately enlarged spleen checked gastric hemorrhages of many years' duration from which the patient was almost exsanguinated Five previous operations of various kinds had failed to cure The patient has remained well for more than four years We have since had a similar experience Sherren, Cushing and others have called attention to the fact that after the removal of the spleen for splenic anemia an occasional patient has a recurrence of hemorrhages Of our seventy-one patients splenectomized for splenic anemia eight died from gastro-intestinal hemorrhage during the next ten years As Balfour points out, the hemorrhages are often the result of toxic substances produced in the liver, and the removal of the spleen will not always restore the liver to normal

SPLENECTOMIES

Up to Jan 1, 1921, 249 spleens were removed in the Mayo Clinic for all causes, with a mortality of 10+ per cent

Splenic Anemia—Of the 249 splenectomies, seventy-one were for splenic anemia of unknown origin, with nine deaths In addition splenectomy was performed in thirty-eight cases for splenic anemias of known origin These cases deserve some attention

Chronic Sepsis—We have removed eleven spleens which had become greatly enlarged in the course of chronic general sepsis following septic arthritis, tonsillitis, phlebitis, and osteomyelitis, with three deaths in the hospital The other patients were cured or greatly benefited

Syphilis—Splenomegalia is often found with chronic syphilis, especially in the cases in which thorough treatment fails to maintain a negative Wassermann reaction Some observers who have had wide experience with syphilis have believed that the large majority of cases of so-called splenic anemia are syphilitic in origin In the syphilitic spleen, generalized fibrosis and thrombophlebitis are found as well as specific changes, especially modified forms of gumma, frequently *Spirochaeta pallida* can be demonstrated We have removed the spleen in six cases of this kind, with one death in the hospital Patients who had resisted thorough syphilitic treatment, and in whom chronic anemia was a manifest sign, were at once made amenable to treatment and quickly recovered

Characteristic portal cirrhosis of the liver may be an end-result of syphilis, and finally death results from circulatory obstruction, ascites, hemorrhage from the stomach, and so forth, quite like the other cases of splenic anemia

Splenic Anemia in Children and von Jaksch's Disease—Von Jaksch has described an enlargement of the spleen in infants due to malnutrition which usually disappears on proper feeding, but some of these patients do not get well and the enlarged spleen and chronic anemia are carried into early childhood We have removed eight spleens in such children without an operative death, and when the condition has not been too advanced cure has followed The spleens removed have shown the characteristic generalized fibrosis and thrombophlebitis

Malarial Spleen—Chronic malaria results in a splenomegalia with generalized fibrosis and thrombophlebitis that we recognize as a form of splenic anemia,

ultimately some of the patients develop cirrhosis of the liver, ascites, hemorrhage from the stomach, and the characteristics described by Banti The removal of the greatly enlarged spleen of this type relieves the anemia The experience of Jonnesco in Roumania and of Mourdas in Russia, as well as that of other observers, has shown that the malarial treatment becomes much more effective and that patients who were apparently incurable have been restored to health following splenectomy The mortality has been considerable following splenectomy in these cases, but this is also true of the entire group of splenic anemias since the spleen is often adherent and may require unusual skill and care for safe removal This is shown by the mortality in our series, which was much higher than that in any of the other pathologic conditions for which the spleen was removed It is understood, of course, that the removal of the spleen does not cure the malaria, but removes a very serious complication, which is one of the means by which the death of the patient is brought about

Chronic Splenomegalia —Finally, there is a type of chronic splenomegalia more common in women than in men, which exists for years without great detriment to the patient beyond the weight of the enlarged spleen In the cases that I have observed, however, chronic anemia has eventually developed, and in a few in which I have operated I have found the definite changes characteristic of splenic anemia I think we must conclude that all such cases are quiescent types of splenic anemia The confused state of our knowledge at least brings one thought to mind, that the patient with an enlarged spleen should be looked on as potentially ill, and unless the cause can be shown and relieved, splenectomy may be considered There is no sharp dividing line between these cases and certain varieties of benign tumors splenic apoplexy, and cystic disease without traumatism in which a definite pathologic condition exists in the blood vessels and may give rise to acute conditions such as intraperitoneal rupture of the spleen

The mortality and end-results are satisfactory, considering the nature and condition of the patients subjected to operation All of the patients we operated on were otherwise incurable and progressing to a fatal issue The death rate from splenectomy in such cases will be high and not all patients who recover will be greatly benefited The later in the course of the disease the splenectomy is performed, the closer terminal and incurable conditions will be found How can we expect to cure all the pathologic conditions found at necropsy? We cannot turn back the hand of time in disease, but early operation will give a low mortality and cure a higher percentage of patients than have been cured in the group which I have considered here

TECHNIC OF OPERATION

In performing splenectomy in the Mayo Clinic, the technic of Balfour is employed The patient is placed on a table, tilted slightly to the right The midline incision of Ochsner and Percy is employed It gives ready access to the spleen, and permits necessary operative procedures on the gallbladder and appendix and makes it possible to remove a specimen of the liver for microscopic examination The spleen is rapidly loosened manually from its attachments to the diaphragm and to the outer parietes It is drawn down into the abdomen, and the space is packed with a large, warm, moist gauze compress While the spleen is retained in the abdomen to act as a barrier against the intestinal protrusion, the vascular connections between the spleen and the stomach are ligated, care being taken not to injure the stomach, which happened in two cases in our experience, one patient dying as the result of septic leakage The inferior margin of the spleen is tilted out of the abdominal incision and the attachments at the splenic flexure of the colon detached and ligated The spleen is then lifted out of the abdomen and the omental and peritoneal attachments anteriorly are divided with a sharp knife, inspected, tied and separated, exposing the vascular pedicle accurately The spleen is turned partly turtle in order to expose the pancreatic notch of the spleen on the outer aspect of the pedicle, and the tail of the pancreas is freed The splenic pedicle is then grasped in such a manner as to compress the artery between the thumb and the finger and is held during a few heartbeats in order to allow the venous blood to drain from the spleen back into the general circulation Two forceps are then placed on the proximal side, and one next the spleen, and the pedicle is divided A catgut tie is made in the groove of the deeper forceps as they are removed, and a second tie in the groove of the second forceps as they are removed With fine catgut on a needle the separated peritoneal tissues and other loose tissues along the upper surface of the pancreas are drawn together and some small bleeding vessels in that situation are secured The pack is then removed As a rule there will be but little hemorrhage of the deeper attachments Occasionally, however, there is bleeding, the catgut suturing should then be carried down through these spaces in a snaking stitch in order to compress the bleeding points which usually cannot be caught in this deep situation and tied separately Care should be taken in coming to the diaphragm not to tear a hole through into the pericardium or pleura, an accident which happened in one of our cases, fortunately without bad result If the needle is caught in the bleeding tissues on the under surface of the diaphragm with about 15 cm of catgut slack in the fingers, the needle may be allowed to pass up with the diaphragm on expiration and be caught as it comes back during inspiration

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ABSTRACT OF DISCUSSION

DR ALBERT J OCHSNER, Chicago It seems as though these splenic conditions which Dr Mayo has described are in fact the result of a physiologic attempt of the spleen to do its work and that it has gotten the worst of it We suppose that the spleen receives blood which is defective to a slight extent and passes it out into the general circulation in a purified condition Many irritants may enter with the blood The most important are the irritants from malaria and alcoholic poisoning The inability of the blood-forming organs to produce normal blood forces the spleen to dispose of great quantities of abnormal blood In Banti's disease, in splenic anemia undoubtedly the enlargement is the result of an attempt to do more work than the spleen should be called on to do The other changes, the increase of connective tissue the arteriosclerosis, the destruction of the lymphoid nodules, are undoubtedly the result of the overload of the poisonous substances that have entered the spleen In pernicious anemia there is some infection that has interfered with the blood-producing organs and has produced a blood that overloads the splenic activity In these cases of Banti s disease and in splenic anemia, it is likely that this irritation has been of such long standing that we have overlooked it As Dr Mayo stated, usually a time comes when there is not enough of the normal spleen left, and then this condition

changes and the anemia occurs, because then the spleen begins to destroy blood that it should not destroy I have followed and examined the spleens in 129 cases My observations agree, so far as the conditions are concerned, very closely with those of Dr Mayo I am thoroughly convinced that his conclusion is correct When we supply new blood by blood transfusion, the blood-producing organs are relieved of their work temporarily They may be relieved to such an extent they will begin to do their work again normally Then the spleen kills off some of the good blood Take out the spleen, and in a certain percentage of cases the other lymphoid organs will be able to take care of that work, and things go on very well

DR WILLIAM J MAYO, Rochester, Minn We know that the spleen is not necessary to life, no great harm comes to an individual if the spleen is removed, and possibly indications for its removal will be found much more frequently in the future than in the past The operation is not so dangerous as it is pictured, but a definite technic is necessary The midline incision of Ochsner and Percy is altogether the best It permits the ready removal of the spleen the inspection of the gallbladder and appendix, and the exploration of the abdomen for associated lesions It permits also the removal of a piece of the liver for microscopic examination, which is often desirable in order to obtain additional information The technic of splenectomy followed in our clinic is that described by Balfour (*Surgery, Gynecology and Obstetrics* **23** 1 [July] 1916)

TREATMENT OF FURUNCULOSIS IN INFANTS *

CLIFFORD G GRULEE M D
AND
CASSIE BELLE ROSE, M D
CHICAGO

Any one who has had much to do with the treatment of furunculosis in infants, especially those cases which occur in malnutrition babies which we so frequently see in hospitals, must have been impressed with the inadequacy of the treatment advised and have been dissatisfied with the results obtained While furunculosis does not often lead to death, it certainly does prolong the state of malnutrition and indirectly may cause a certain amount of infant mortality

For many years it has been our custom to treat these cases without the application of antiseptic ointment as is so frequently advised The furuncles are opened as they appear, before and after which the skin is very thoroughly cleansed with 50 per cent alcohol Moist applications of 50 per cent alcohol are applied frequently thereafter, and the children are given 1 10,000 mercuric chlorid bath if the condition is at all extreme In this method of treatment a great deal depends on careful and continued observation of the case and attention to the individual furuncles as rapidly as they develop We have felt that the results obtained by this method are less likely to be followed by extensive distribution than when antiseptic ointments are used

We have not been able to obtain anything like specific results from vaccine treatment or from the use of yeast in these babies, so that we have long since abandoned such therapeusis

From the success that has attended the use of the roentgen rays in similar conditions in adults we felt that we might by a combination of the two methods obtain better results than with either alone

The roentgen-ray treatment of carbuncles and localized pyogenic infections of the skin of adults is reported only a few times in the literature, but with favorable results Dunham [1] and also Ruggles [2] recommend a full therapeutic dose (filtered) covering the entire carbuncle at one exposure No report was found on the roentgen-ray treatment of similar conditions in babies

Roentgen-ray treatment suitable for acne might also be considered helpful for furunculosis For this disease Pancoast [3] recommends an erythema dose divided into from two to four sittings over a period of three weeks, followed by a rest interval MacKee [4] and also Hazen [5] recommend a little less than an erythema dose, unfiltered

Encouraged by these reports, and by the results of the work with pyogenic infections of the skin of adults, both carbuncles and acne, done by one of us (C B R), we attempted the roentgen-ray treatment of furunculosis in babies

The difficulties to be considered were, first, the well known susceptibility of young children to roentgen rays, second, that furunculosis often occurs in babies otherwise sick, and third, that furunculosis is often of long standing, although the individual furuncles may not be

In the work with carbuncles in adults, it was learned that if the inflammatory condition had been of long standing, a roentgen-ray dose, which on a normal skin would produce a simple erythema, might in these cases cause a severe burn

With all these facts in mind, we tried to determine with the first child the quality of ray and the minimum dosage that should be used to secure results

REPORT OF CASES

CASE 1.—The furunculosis had existed for four weeks At this time there happened to be besides others four furuncles in about the same stage on the right leg One was left untreated as a control The second was given a soft unfiltered ray (3 milliamperes 6 inch spark gap, 9 inch focal distance, no filter, for one minute) The third was given the same dosage for two minutes On the fourth a hard filtered ray was used (6 ma 9 inch spark gap 4 mm aluminum filter, 9 inch focal distance, for one minute) None of the furuncles received any other treatment Five days later all four furuncles were definitely drying up but the fourth one apparently showed slightly the greatest amount of improvement No new furuncles appeared following this treatment, and the child was sent home

CASE 2.—In the five treatments given, the same hard filtered ray was given as that used for the fourth furuncle in Case 1 At the first sitting three separate furuncles were irradiated, only the lesion being treated Two of the furuncles disappeared A second treatment of the third furuncle was followed by success The third and fourth treatments were given over the left side of the head covering a circular area 3 inches in diameter These two treatments were eight days apart No beneficial result was noted after the third treatment Four days after the fourth treatment there was partial epilation over this area, and only a few furuncles remained The fifth treatment was over one small furuncle above the right ear The lesions cleared up after this, and the child was sent home a week later without furuncles

CASE 3.—Four treatments were given For the first treatment given Nov 24 1920 the soft unfiltered dosage given to

* From the wards and roentgen ray department of the Presbyterian Hospital Chicago

* Read before the Section on Diseases of Children at the Seventy Second Annual Session of the American Medical Association, Boston June, 1921

1 Dunham Am J Roentgenol **3** 259 (May) 1916
2 Ruggles California State J Med **14** 46 (Dec) 1916
3 Pancoast in Musser and Kelly Practical Treatment
4 MacKee New York M J **102** 441, 1916
5 Hazen H H The Roentgen Ray Treatment of Acne Vulgaris J A M A **69** 977 (Sept 22) 1917

the second furuncle in Case 1 was used, applying it over only one small furuncle on the back of the head Subsequently, several furuncles appeared in the same region The second and third treatments were given four days apart (December 9 and 13) and covered a circular area 4 inches in diameter A hard filtered ray was used (6 ma, 9 inch spark gap, 4 mm aluminum filter, 9 inch focal distance, for one minute) Partial epilation occurred, but the furuncles subsided The general pustular condition remained active, however, till Jan 17, 1921 after which it receded for a time Later, two more small furuncles appeared on the face and were irradiated, February 3, the same soft unfiltered ray being used as in the first treatment of this case One of these furuncles was opened subsequently February 11 after which no new furuncles appeared The child was sent home, February 15

CASE 4—The patient entered the hospital, Nov 23, 1920, with a "diarrhea and erythematous papulopustular eruption on the buttocks" December 6, several furuncles appeared about the head December 18, one roentgen-ray treatment was given, covering a circular area on the left side of the head, 3 inches in diameter For this a fairly hard filtered ray was used (5 ma, 7 inch spark gap, 4 mm aluminum and sole leather filter, 9 inch focal distance, for one minute) The next day the furuncles were greatly reduced None appeared after this, and the child went home, December 23

CASES 5, 6, 7 and 8—In the next four cases a soft ray and no filter was used, the dosage being 3 ma, 6 inch spark gap, 9 inch focal distance for one minute This dosage was decided on because the hard filtered ray had twice produced epilation In Case 5, following two of the treatments, each of which covered a circular area 4 inches in diameter, a rise in temperature up to 103 5 F occurred and it was considered a possibility that the roentgen-ray treatment had been a factor in its production A later treatment, however of the same child, of the same intensity and over the same sized area, was not followed by a temperature reaction

The total number of treatments in these four cases was sixteen, part over individual furuncles only, and part over larger areas Individual furuncles frequently subsided, but treatment did not prevent the appearance of new crops No epilation occcurred

Several cases have been treated in like manner subsequently, but these are representative of the results obtained in our wards and private practice during the last year

SUMMARY OF RESULTS

In any statement summarizing the results of roentgen-ray treatment of furunculosis in babies, it is to be remembered that these lesions frequently vary in intensity without apparent cause The general impression as to the results of the roentgen-ray treatment in these cases has been, on the whole, favorable, but from the roentgen-ray standpoint the series has been far too small to draw any definite conclusions as to the ultimate results as compared with other methods of treatment We believe, however, that the results so far have shown that it is better to use a soft ray and no filter These lesions are very superficial, and therefore easily reached, and hard filtered rays have produced epilation, even with short exposures, and may therefore be considered too dangerous to recommend in the treatment of superficial skin lesions in children

From the results obtained from this small number of cases, certain reactions have occurred so regularly that they suggest that the roentgen rays may be employed in certain restricted ways for furunculosis in infants It should be stated first that our original hope that roentgen-ray treatment of individual furuncles would produce a certain immunity to future recurrence was not justified In no single case has this been true However, when the furuncles are in the early stage of development and not very deep, the local results have been surprisingly gratifying, they have not been such as entirely to do away with the surgical procedure, but they have certainly reduced the necessity for opening the abscesses very greatly When the process has been very superficial and over an extended area, the results have been most gratifying We therefore feel that the proper use of the roentgen rays may add materially to the efficacy of our treatment of furunculosis in babies

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ABSTRACT OF DISCUSSION

DR FRANK C NEFF, Kansas City, Mo Did you include the late pustular or stage of pemphigus which is epidemic in hospitals for the new-born? These children undoubtedly have a reduced resistance to infection

DR MYER SOLIS COHEN, Philadelphia Results from vaccines have been rather unsatisfactory, and I think we can see an explanation for that in some work that was done very recently Dr George D Hirst, Dr Cohen and I discovered that the fresh blood of animals immune to a disease killed the organisms causing that disease, while the blood of animals that are susceptible to a disease does not kill those organisms We found that the blood of animals which are immune to diphtheria kills the diphtheria bacillus These tests were made in vitro A curious finding is that the ordinary contaminating organisms do not grow in the blood during the test Only those organisms will grow against which the blood lacks bactericidal power A method which can be used in babies, in whom it is difficult to get so much blood is to take the pus from the furuncle and grow it on an agar plate and the organisms that grow, grow separately Then dilute 1 10 000 and 1 100,000 and allow each dilution to run into a separate capillary tube Touch a piece of muslin into it and allow it to run out This leaves a layer of organisms in the capillary tube Allow the blood to flow into the tube and seal and incubate for twenty-four hours and then the organisms against which the blood has bactericidal power have disappeared while the other organisms have grown vigorously Make the vaccines from those cultures and inoculate in the usual way, and the patient will get well In no series of pyelitis cases in which this procedure was done did any case fail to respond to the treatment

DR CLIFFORD G GRULEE Chicago We have had a great many cases of pemphigus in the new-born, but I have not had the temerity to use roentgen-ray treatment on the skin of the new-born As to the vaccines, it has been quite a while since I abandoned them but I never felt from my experience that I could get any regular results I thought they were merely happenings, the results being such as I might get without them, hence I have long since abandoned vaccines as it is painful to the child to give them As to the results of Dr Cohen I have had no experience with his methods

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Occupational Skin Diseases—In an investigation by the United States Public Health Service into the causes and prevalence of skin diseases arising from occupational hazards many employees were found to be suffering from occupational diseases, mostly of the skin, without either the plant physician or the men themselves realizing that the trouble was more than individual In one plant, where khaki cloth was made up, inspection disclosed a woman who complained that a slight cut from her scissors had resulted in eczema, a boy who carried bales of the cloth on his shoulders claimed that the dust from the bales had given him the same disease, and a number of women stitchers, whose duties required that they handle and sew the cloth continuously were affected with conjunctivitis Analysis of the dust showed that it contained a large percentage of chrome yellow and sulphur dioxid In another plant where 1 000 men at machines used large amounts of "cutting' oils superficial investigation revealed that about one fourth of those examined were suffering from eruptions and other skin troubles

THE CURE OF INFANTILE RICKETS BY SUNLIGHT

PRELIMINARY NOTE

ALFRED F HESS, M D
AND
LESTER J UNGER, M D
NEW YORK

Encouraged by our results in curing rickets by means of the ultraviolet ray,[1] we have recently attempted to attain similar results by the direct action of the sun's rays Infants have been exposed for a half hour to several hours, varying the period of treatment according to the intensity of the sun and the sensitiveness of the skin The legs, arms, trunk and face were in turn exposed It is remarkable how well infants under 1 year of age react to this outdoor treatment, if carried out gradually and under careful supervision Five infants, three between 6 and 12 months, and two between 12 and 18 months of age, were treated in this manner The exposures obviously could not be carried out with regularity, as we were dependent on the weather, but experience showed that daily treatment is not essential In one of the cases which responded most favorably, the patient could be given the sunlight treatment only on seven days between April 3 to 19, during this period exposure was given for a total of twenty-five hours In every instance there has been marked improvement in the rickets as evidenced by the calcification of the epiphyses noted by means of the roentgen ray The alteration resembled that which follows the administration of cod liver oil, and, in one instance, occurred thirteen days after heliotherapy was begun The general condition of the infants was also benefited, as were other signs of rickets, such as beading of the ribs and flabby musculature In one case, calcification of the epiphyses of both wrists was evident, when as yet but one arm had been exposed to the sun—evidence that the action of the rays is systemic and not local

As stated elsewhere, it has been our experience that rickets is encountered occasionally on every food, without exception, on a dietary containing a large quota of milk, and therefore rich fat, on a diet lacking fat and the fat-soluble vitamin, on raw or pasteurized milk It has been noted on a diet of fluid milk, dry milk, condensed milk, protein milk and human milk On every one of these diets a few babies have been found, in the course of routine roentgen-ray examinations, to have some rickets, whereas others have remained normal This peculiar phase of the etiology we shall, however, discuss at some future time The babies which we cured by means of the sun's rays were on regular dietaries, such as whole milk and cereal, or dried milk, cereal and orange juice This diet was not altered during the course of treatment The fact that some were receiving the same dried milk for the entire period renders it evident that the curative effect cannot be attributed to a qualitative alteration in the milk, such as might be occasioned by a change in the fodder of the cows Such an effect has been suggested in view of the influence which the fodder of the cows has been found to exert on the antiscorbutic content of the milk

We have elsewhere considered the role of the actinic rays in an interpretation of the seasonal variation of rickets, and expressed the opinion that it is the dominant factor in this incidence We do not wish to infer, however, that diet it not of importance in the etiology of rickets, but rather that a hygienic factor—sunlight—is also of importance In almost all of the investigative work on animals which has been so fruitful in the last few years, attention has been focused solely on dietetic factors

It is unnecessary, in this preliminary note, to discuss in detail the theoretical and practical deductions to be drawn from these observations They are obvious It is clear that they have important bearing on the geographic distribution of rickets, and on measures for its prophylaxis and cure, as well as on investigations designed to elucidate its etiology Indeed, it would seem that the action of the sun's rays will have to be taken into account in metabolism studies on animals and man which concern themselves with the body exchanges of the inorganic salts

16 West Eighty-Sixth Street—162 West Eighty-Fifth Street

1 Hess A F and Unger L J An Interpretation of the Marked Seasonal Variation of Rickets Am J Dis Child, to be published

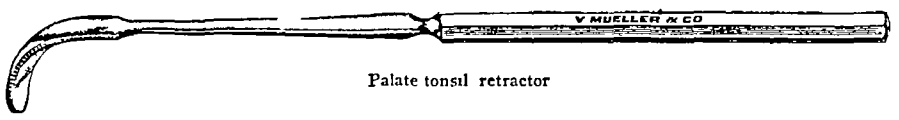
Clinical Notes, Suggestions, and New Instruments

A PALATE TONSIL RETRACTOR

JOSEPH B GREENE M D, ASHEVILLE N C

At the risk of adding one more instrument to the large number already used in tonsil operations, I am presenting one which has been particularly useful to me In fact, I find it so very helpful in the dissection of the faucial tonsil that I would hesitate to attempt the operation without it The instrument is about 9½ inches in length, with a curve at the distal end which accurately fits over the upper lobe of the tonsil The edges of the curve are slightly serrated in order the better to retract the mucous membrane of the soft palate

After the tonsil is seized with forceps, the assistant retracts the soft palate with gentle pressure and in this way brings into accurate view the line of attachment of the palate to that of the tonsil The operator then with a sharp knife or scissors



Palate tonsil retractor

incises the mucous membrane at its point of attachment to the tonsil, thus sparing not only the muscular tissue but also the mucous membrane With the tonsil thus separated at its mucous attachment the following steps in its removal can be made either by sharp or blunt dissection as the operator may prefer As most surgeons experience their greatest difficulty at the beginning of the dissection, it is obvious that any instrument that will make this step easier adds distinctly to our armamentarium This instrument finds its greatest usefulness in the so-called friable and submerged tonsil found particularly in children As this instrument forces the mucous membrane over the tonsil it can be readily seen that less traction will be required on the tonsil forceps, thereby lessening the danger of losing the hold by tearing It is the experience of all of us that when the forceps once tear out by traction each subsequent hold becomes distinctly more difficult and uncertain

Another class of tonsils in which this instrument is of great value is in retracting the palate of adult tonsils which have been subjected to frequent inflammations, particularly those which have been the site of peritonsillar abscess

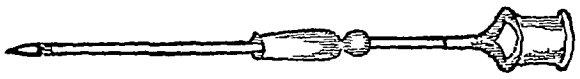
305 Haywood Building

A DEVICE FOR STEADYING THE NEEDLE DURING INTRAVENOUS WORK

HAROLD A ROSENBAUM M D CHICAGO

In giving intravenous medication or in drawing blood from a vein it not infrequently happens that, after the vein has been successfully entered, an accident happens and the needle passes on through the vein or is withdrawn superficial to the vein This difficulty is more likely to happen in infants or children, in whom there is frequent resistance to the procedure

If, after the vein has been entered, a bulbous body around the needle could be slipped toward the point of the needle as far as the skin, and if this bulb would not slip back when pressure was applied to the needle, it would be possible to hold the needle in position in the vein by pressure toward the vein This guard would prevent the needle from passing on through the vein when pressure was applied and, obviously, the needle would not be withdrawn



Scarf pin clasp on needle in position before vein is entered

The ordinary scarf-pin clasp serves this purpose very well and is large enough for any needle up to a 15 gage It must be slipped on the needle with the adjusting globoid portion of the clasp opposite the point of the needle When entering the vein the clasp is well up on the needle, and as soon as the vein has been entered an assistant slips the clasp down to the skin For longitudinal sinus work in infants, needles are now used which have a stationary bulb the proper distance from the point as required for this operation Such a needle is manifestly impracticable with intravenous work in general because a varying length of the needle is used, depending on the depth of the vein and on the angle of approach These easily adjustable clasps may be found at any jeweler's or haberdasher's

Michael Reese Hospital

POSTINFLUENZAL EPILEPSY

REPORT OF CASE

LOUIS HANNAH M D SYLVANIA GA

After searching the literature at my command for all neuropsychic complications and sequelae of epidemic influenza I was greatly surprised to find no mention of epilepsy or epileptiform psychoses until I came across the report of such a case by Clark[1] Although Dr Clark has apparently undisputed claim to priority in announcing and describing this condition in connection with influenza, it is perhaps worth while to report a second instance of its occurrence, which came to my attention recently, and which has some points of divergence from the prior description

REPORT OF CASE

A boy, aged 22 whom I first examined March 5, 1921, presented as his chief complaint sudden attacks of vertigo, loss of consciousness, and tonic spasms of the muscles of both face and arms, which lasted from a few seconds to half a minute each time His father stated that there were muscular twitching of face, lips and arms, pallor of face, change of facial expression, widening of the palpebral clefts, dilatation of the pupils and at times sudden suspension of conversation, and there was always a momentary relinquishing of any act or performance in which the patient was engaged at the instance of a seizure He would always immediately drop anything held in his hand, when seized by one of these spells and on one occasion narrowly averted a serious accident in driving an automobile, when he momentarily released the steering wheel No real convulsions, stertor, foaming at the mouth, or biting of the tongue were ever exhibited There were no aurae in this case, with the possible exception of a sensation of dizziness, and the patient was only conscious, after attacks, of having fallen, or if seated at the time, of having experienced some unusual manifestation These attacks always occurred during the day, and had numbered from one to two weekly, gradually increasing to from three to twelve daily, since two years before, when the first spell was initiated by an attack of influenza and pneumonia The first epileptiform seizure appeared simultaneously with the occurrence of influenza, although one year previously the patient had also experienced an attack of influenza and pneumonia, without any such complication or sequela He has never had any grand mal attacks, the attacks described being strictly of the petit mal type The only other symptoms were nervousness, restless sleep, occasional night sweats, and recently aching of the head and limbs, due to malaria

The past history was of no importance exclusive of influenza and pneumonia The general appearance of the patient was that of a well-developed, robust boy, of plethoric diathesis His physical record was perfect, and, until stricken with the present disorder, he was engaged in farming He had gained 30 pounds in the last six months His record in school was excellent The family history was negative, except for a neurotic tendency

The physical examination proved negative generally, and all deep reflexes were normal The systolic blood pressure was 130, diastolic, 90

Laboratory tests of the blood revealed hemoglobin, 80 per cent, malaria positive, eosinophilia present, Wassermann test negative The spinal fluid was negative chemically microscopically macroscopically and culturally The urine was negative except for large amounts of indican, which was found persistently at different times The feces contained a large number of *Uncinaria americana* ova The Detre tuberculin test (Ryan modification) was negative

The treatment in this case was first directed to the removal of hookworms, and following the administration of 48 minims of oil of chenopodium, the feces was rid of all ova The patient was then given three weeks' course of antimalarial remedies Later, ½ grain of yellow mercurous iodid, three times a day was prescribed, also a daily dose of a 1½ grain tablet of luminal, which the patient was directed to increase to two daily if necessary Several examinations of stools were subsequently made, with negative results until April 23 when, after diligent search, an occasional hookworm egg was discovered A second course of anthelmintic treatment was then promptly instituted, but further examinations of stools have not since been made Luminal in 1½ grain daily doses is still being prescribed, while other medicines have been discontinued

COMMENT

The progress of this case has been marked by some improvement the patient not having had any attacks for two or three days at a time, and the attacks have decreased in severity While at first the patient continued apprehensive of his affliction and was incapacitated for farming, he is at present very optimistic and is able to do practically as much work as before he became affected, being seldom interrupted in his occupation A peculiar thing about these attacks as stated by the patient, is the fact that they are much milder when he is out in the field plowing As yet, I am somewhat concerned about the ultimate prognosis in this case, since the petit mal type of this affection is the most difficult to cure However, one could hardly reach conclusions in the course of less than three months' observation

Although we are extremely dubious as to the etiologic relationship of influenza to epilepsy, it is certain that the former condition precipitated the unusual attacks just described As to etiology, my first impulse was to ascribe a major factor to hookworm infestation, but recovery did not ensue after the complete eradication of ova from the stools until the subsequent administration of luminal was begun It is possible that, in addition to intestinal uncinariasis, the patient may have a somatic type of the infection We know that hookworm larvae have been found in various organs of the body, and it is not impossible that, in this instance, they may be lodged in the brain and so perpetuate symptoms after expulsion of worms from the intestines I am not informed of any treatment that might be directed to such parasites in the brain

1 Clark L P Influenza and Epileptiform Attacks J A M A 73 1767 (Dec 6) 1919

The points of diagnosis in this case are the persistent repetition of sudden attacks of unconsciousness, coming as a bolt out of a clear sky and affecting an individual apparently in perfect health between the seizures, the absence of a discoverable cause for the disorder pallor of the face, widening of the palpebral clefts and dilatation of pupils, suspension of speech, and tonic spasms with muscular twitching Also, the persistence of indican in the urine is, when taken in conjunction with other symptoms, corroborative of epilepsy

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PHENOLTETRACHLORPHTHALEIN ESTIMATION IN THE DUODENAL CONTENTS *

MAX KAHN M D, PH D NEW YORK
Director of Department of Laboratories, Beth Israel Hospital

In order to study the efficacy of the method of Lyons to stimulate the flow of bile into the duodenum, I resorted to this technic

A duodenal tube of the Einhorn type was passed into the duodenum on a fasting stomach When it was made certain that the duodenal tube was in the proper site, 8 c c of a solution of phenoltetrachlorphthalein (prepared according to the method of Rowntree, Marshall and Chesney) was injected intravenously At the same time 25 c c of a saturated solution of magnesium sulphate was introduced through the duodenal tube into the duodenum

The contents of the duodenum were pumped off in 5 c c fractions every ten minutes It was found that traces of the phenoltetrachlorphthalein appear in the duodenal contents within twenty minutes of the administration of the drug, and that the administration of the magnesium sulphate intraduodenally markedly stimulates the flow of the bile by relaxing the sphincter at the ampulla of Vater as measured by the phenoltetrachlorphthalein output

By this method it is possible to study the functional capacity of the liver, and work along this line has already been inaugurated The former method of phenoltetrachlorphthalein function study of the liver by analysis of the fecal output was tedious and unpleasant, and thus fell into disrepute

By the method of Lyons, one stimulates the excretion of bile into the duodenum One cannot tell, however, whether the emptying of the gallbladder is influenced by means of the magnesium sulphate administration Apparently most of the bile secreted (or excreted) after the magnesium administration comes directly from the liver, for the appearance of the drug in the duodenal contents is too rapid to assume a collection of it in the gallbladder previous to its elimination into the alimentary canal

* Portion of a paper read before the Williamsburg Medical Society May 9 1921

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION W A PUCKNER, SECRETARY

ORTHOFORM —Orthoform-New —Methyl Metaaminoparaoxybenzoate — C_6H_3 NH OH CO O (CH_3), 3 4 1 —The metaaminoparaoxybenzoic acid ester of methyl alcohol

Actions and Uses—Orthoform is a local anesthetic, but penetrates the tissues very slowly on account of its insolubility It has no action on the unbroken skin It is practically non-toxic in the usual doses

Orthoform is used internally to relieve the pain of gastric ulcer It has been applied locally as an analgesic to wounds of every description It has been used in dentistry, in nasal catarrh, hay fever, etc

Dosage—Internally, from 0 5 to 1 Gm (8 to 15 grains) in emulsion, locally, in substance as a dusting-powder or mixed with milk sugar for insufflation dissolved in ether and mixed with oil for pencilings, or as an ointment with wool fat, etc

Manufactured by Farbwerke vorm Meister Lucius and Bruening Hoechst a M Germany (H A Metz Laboratories, Inc New York distributor) U S patent Nos 610,348 (expired) and 625,158 (expired)

Orthoform occurs in a fine white crystalline powder neutral in reaction and melting at from 141 to 143 C odorless and tasteless It is almost insoluble in water freely soluble in alcohol soluble in ether It is decomposed by boiling with water or by warming with alkalies or their carbonates into methyl alcohol and paraoxybenzoic acid or the alkali salt of it When crystallized from chloroform it sometimes assumes the form of white crystals melting at from 110 to 111 C returning on melting to the ordinary form

The filtrate obtained after shaking a small quantity of the ortho form with water produces a fugitive color with ferric chloride and should not give a reaction with silver nitrate A solution of 0 1 Gm orthoform dissolved in 2 Cc of water by the aid of hydrochloric acid is colored yellowish red on addition of sodium nitrate and then deposits a yellow precipitate deepening to red on exposure to the air It is decomposed by heating with water it is incompatible with alkalies and their carbonates

AMIDOPYRINE —Amidopyrina —Pyramidon —
C_6H_3N CO N (CH_3) C C (CH_3) N (CH_3)
Dimethylamino-phenyl-dimethyl-pyrazolon, differing from antipyrine $C_{11}H_{12}N_2O$, in that a dimethylamino group, $N(CH_3)_2$, has replaced a hydrogen atom of the pyrazolon nucleus

Actions and Uses—Amidopyrine acts as an antipyretic and anodyne like antipyrine, but is effective in smaller doses The action, while somewhat slower at the beginning is more lasting It is claimed to be comparatively free from harmful influences on the blood heart or kidneys It is said to be useful particularly in the chronic fevers of tuberculosis, as well as in the acute febrile conditions incident to typhoid fever erysipelas and pneumonia In the treatment of infectious fevers it like other antipyretics should be cautiously employed See general article Phenetidin Derivatives

Dosage—From 0 3 to 0 4 Gm (5 to 6 grains), most conveniently in the form of tablets a single dose usually sufficing for twenty-four hours

Amidopyrine is prepared by the reduction of nitroso antipyrine to amino antipyrine and treating this with methyl chloride or methyl iodide

Amidopyrine occurs in small colorless odorless crystals almost tasteless permanent in the air Amidopyrine is soluble in water freely soluble in alcohol ether and benzene Its aqueous solution saturated at 70 C deposits oily globules of amidopyrine on boiling The aqueous solution is faintly alkaline to litmus paper Amidopyrine melts at 108 C

Ferric chloride solution colors the neutral or slightly acidulated aqueous solution of amidopyrine (1 20) a bluish violet color nitrous or nitric acid produces a fugitive blue violet color silver nitrate produces an intense violet coloration followed by the formation of a black precipitate of metallic silver a similar color is produced by platinum chloride by ammonium persulphate by lead dioxide and by iodine test solution In general the incompatibilities of amidopyrine are the same as those of antipyrine Oxidizing agents (also acacia) often produce colored solutions

To 10 Cc of an aqueous solution of amidopyrine (1 20) add 1 Cc of hydrochloric acid and 5 Cc of mercuric chloride test solution A white crystalline precipitate results

Incinerate about 1 Gm of amidopyrine accurately weighed Not more than 0 1 per cent of ash remains

Amidopyrine-Calco —A brand of amidopyrine N N R

Manufactured by The Calco Chemical Co Bound Brook N J No U S patent or trademark

MESOTAN — Salmester — C_6H_4 OH CO O $(CH_2O\,CH_3)$ — Methyl oxymethyl salicylate, an ester of salicylic acid, analogous to methyl salicylate

Actions and Uses —Mesotan is an active counterirritant, used especially in rheumatic conditions, similarly to the local application of methyl salicylate It is more irritant than the latter and lacks its odor It is absorbed from the skin but its action is predominantly local, relieving pain and swelling It is not an efficient means for producing the systemic actions of salicylates

Dosage —For application mesotan is diluted with 1 to 4 parts of olive oil or cotton seed oil and painted over the affected area usually twice daily Friction should not be used and dressings, if any are necessary should be light and permeable The site of application should be changed if possible after each treatment, or the area may be rested for two days after four days of treatment

Manufactured by The Bayer Co Rensselaer N Y (Winthrop Chemical Co Inc, distributor) U S patent No 706 018 (Aug 5, 1902 expired) U S trademark No 39 017

Mesotan is a clear yellowish faintly aromatic oily fluid specific gravity 1 2 at 15 C and boiling at about 162 C It is but slightly soluble in water but readily oluble in the usual organic solvents and miscible with oils in all proportions Above 100 C it is decomposed yielding salicylic acid formaldehyde and methyl alcohol and it is likewise decomposed to a certain extent by moisture in the air

The aqueous solution of mesotan gives a violet color with ferric chloride and after heating or exposure to moisture it responds to the usual tests for formaldehyde Concentrated sulphuric acid colors it red

Mesotan should be kept in a cool place and preserved dry in well stoppered bottles

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SATURDAY, JULY 2, 1921

THE UTILITY OF ANTIPLAGUE VACCINES

Little more than a quarter of a century has elapsed since Yersin and Kitasato independently described the bacterium of bubonic plague in 1893 Within four years thereafter, Haffkine first reported the possibility of protective vaccination against the disease caused by *B pestis* The announcement was followed by a number of investigations designed to test the type of vaccine most suitable for the purpose Haffkine's procedure involved the use of killed broth cultures of the microorganism The German Plague Commission, consisting of Gaffky, Pfeiffer and Dieudonne, recommended a vaccine of killed agar cultures Subsequently Kolle and others, believing that such products do not bring about protection against subsequent inoculation with highly virulent cultures, advocated the use of highly attenuated living cultures of the plague bacterium for the purpose of effective immunization Such a procedure is obviously fraught with dangers unless suitable precautions are taken and a proper control is rigorously instituted

Antiplague inoculations have been carried out extensively in India for many years The Indian Plague Commission reported that vaccination in man diminishes the incidence of the disease, but that it does not furnish absolute protection Apparently the duration of immunity does not exceed a few months The immune substances are not demonstrable until ten days have elapsed Karsner and Ecker[1] assert that objections have been made to the earlier favorable statistics on the ground that sufficient attention may not have been given to the relative prevalence of infected rats or other variable hygienic conditions which are likely to play an important part in the prevalence of plague infection

In the recent series of articles in THE JOURNAL dealing with serums, vaccines and nonspecific therapy, Teague[2] has presented current evidence to warrant the tentative conclusion that protective inoculations diminish the incidence of plague in human beings and lower the percentage of mortality in those that contract plague in spite of inoculation, but they do not serve as a factor in eradicating plague permanently from a district or country The foregoing remarks apply only to bubonic plague Pneumonic plague, though caused by the same organism, is clinically and epidemiologically an entirely different disease It has not been shown that prophylactic inoculations cause a decrease in either the incidence or the mortality of pneumonic plague The serum of immunized animals has been tried as a therapeutic agent in plague and seems to have had some success for this purpose, whereas it is certainly unable to confer any complete or durable immunity

The promising possibilities which the studies in the immunology of plague have disclosed are liable to engender an unwarranted sense of security or even victory over a disease that can count its victims by the millions in India alone in the last two decades In any event, the rat and the flea remain untouched McCoy and Chapin of the U S Public Health Service venture even to assert that the utility of vaccines and serums in antiplague work is at best not proved They contend that vaccination is not known to have ever controlled a plague outbreak Hence the government experts have uttered the renewed advice that popular and professional interest should not be allowed to become diverted from antirat measures We reiterate their slogan If people want to be vaccinated for plague, let them, but the important thing is to kill the rats

1 Karsner H T and Ecker E E The Principles of Immunology, Philadelphia 1921 p 294

2 Teague, Oscar Biologic Therapy V Vaccination Against Plague, J A M A 76 243 (Jan 22) 1921

HAVE SPERMATOZOA FUNCTIONS OR EFFECTS OTHER THAN FERTILIZATION?

It has commonly been held that in the process of fertilization Nature exhibits one of her least economical sides, the endeavor to secure perpetuation of the species apparently warranting the utmost extravagance Plants cast their fructifying pollen into the air on the chance that some may fall on the germ cells or receptive organs of other plants of the same species, regardless not only of the wastefulness of the process but also of the receptive mucosa of the hay-fever subject Fish cast spermatozoa into the ocean currents, which carry but an infinitesimal fraction to the waiting ova The mammal injects a million or two spermatozoa only one or at best a few of which may carry out the fertilizing function What becomes of the remainder? Are they excreted as waste material, or may they, perhaps, have some function or produce some effect in the recipient organism? Zoologists have found that in some of the invertebrates the spermatozoa invade the entire body of the female, and in some species they reach the ovum by penetrating the cuticle from outside and migrating to their goal The ancients have in times past assumed that the male elements invade the female tissues, and Kohlbrugge[1] has found that this speculation may have reached correct conclusions In various rodents that he has studied, such as mice, bats and rabbits, he found that the spermatozoa penetrate the epithelium of the generative

1 Kohlbrugge Arch f Entwicklngsmechn 35 165 1912

mucosa and invade the underlying connective tissue There is every reason to believe that if such a process occurs in several mammalian species it occurs in all, but, so far as we know, no observations have been made on the fate of the sperm cells in the human species

The question naturally follows, What effects, if any, are produced by spermatozoa that invade the female tissues? In the rodents studied, Kohlbrugge found that the cells invaded seemed to be stimulated to growth, suggesting that this may influence the uterine mucosa in its preparation for receiving and embedding the egg, and in forming the decidua One also thinks of the possibility of immunologic effects, for it has been established that sperm cells contain proteins so special that they may readily induce immunologic reactions in the same species as the one that has produced them, in which respect they resemble the proteins of the crystalline lens, or the placenta Waldstein and Ekler [2] have tested this possibility and found that rabbits develop a distinct Abderhalden reaction for testicular proteins shortly after cohabitation, which seems to establish the thesis To be sure, the use of some other immunologic method might furnish more convincing evidence in view of the unsatisfactory status of the Abderhalden reaction, but in this particular sort of work its results are by no means without significance At the least, these observations show that some significant change has been produced in the female blood plasma following reception of the sperm, which is similar in at least one respect to the effect of subcutaneous injection of sperm Furthermore, it has been shown in other experiments that sperm has a marked capacity to produce antibodies, even when implanted in the tissues in a collodion sac, or when an entire testicle with its dense capsule is implanted [3] An observation with striking possibilities has recently been reported by Dittler,[4] who found that by immunizing female rabbits with sperm they are made sterile for some time, although after a few months they become again capable of impregnation Similar results have been obtained by others who immunized with testicle extracts As immunization with sperm from other species failed to produce sterility, and as the serum of the rabbits injected with rabbit sperm was found to be spermatotoxic and agglutinative, Dittler believes that the sterilization depends on immunization against the sperm of the homologous species

These various facts raise many questions and stimulate probably more speculation than they warrant For example, if spermatozoa invade the female tissues and cause the formation of specific antibodies which are capable of preventing fertilization, may not such a process participate in the problem of sterility? May not the traditional sterility of the prostitute depend sometimes on such a process rather than on inflammatory sealing of the tubes? May not such spermatotoxic substances so modify the sperm or the fertilized egg as to lead to abnormalities of importance in teratology? Guyer has shown that antilens serum when injected into gravid animals may lead to the production of offspring with defective eyes, and the defect so produced is transmissible to subsequent generations,[5] and we might expect spermatotoxins to produce equally disastrous effects on the fetus It is to be hoped that the importance of this subject will lead to the investigations necessary to answer the questions that it raises

2 Waldstein and Ekler Wien klin Wchnschr **26** 1689 1913
3 Metalnikoff and Strelnikoff Ztschr f Immunitatsforsch **17** 186
4 Dittler München med Wchnschr **67** 1495 1920

BACTERIA IN THE NOSE AND THROAT

It was to be expected that the rapidly growing interest in the important problems of infections through the respiratory tract should call forth more fundamental studies of the physiology and bacteriology of the nasopharynx An elaborate system of sensitive mucous membranes and peculiar adjacent structures forms a unique nidus for all sorts of microbial invaders What are the commonest of these? How long can they thrive there? What are the defenses of the organism against them, and how can the undoubted natural immunity be broken down? To this sort of inquiries thoroughgoing investigations obviously must be devoted

Bloomfield [6] of the Johns Hopkins Hospital has gained the conviction from his now extensive bacteriologic examinations of the throats of healthy persons that certain organisms are almost constantly present in the individual from day to day In this normal flora, gram-negative cocci and nonhemolytic streptococci are included The more accidental or occasional organisms include staphylococci, diphtheroids and others, which not infrequently may be introduced into the mouth, but are transients and are promptly eliminated Bloomfield states that they usually disappear in a few days, just as foreign organisms do when introduced experimentally Mechanical flushing is a potent force in the protective mechanism of the upper air passages According to the Baltimore investigator, the normal surfaces of the latter afford an unfavorable environment for foreign organisms, both pathogenic and nonpathogenic, and special conditions are needed to make possible their prolonged or permanent presence Such conditions, as a rule, consist of the production of disease, or at least a focus of diseased tissue in which the organisms may colonize

That the special conditions here postulated do arise is implied in the unlike facility with which different organisms can be implanted Some rarely survive the period of introduction more than a few hours On the other hand, Moss, Guthrie and Marshall [7] have readily produced a carrier state in healthy persons by inoculation of the throat with avirulent diphtheria bacilli

5 The Experimental Production of Congenital Defects editorial J A M A **75** 1346 (Nov 13) 1920
6 Bloomfield A L The Significance of the Bacteria Found in the Throats of Healthy People Bull Johns Hopkins Hosp **32** 33 (Feb) 1921
7 Moss W L Guthrie C G and Marshall, B C Experimental Inoculation of Human Throats with Avirulent Diphtheria Bacilli Bull Johns Hopkins Hosp **32** 37 (Feb) 1921

Some still harbored them after fifteen months They could not be prevented from developing by antitoxin It is comforting to know that the bacteria showed no tendency to become virulent as the result of this type of "animal passage" Accordingly, it may be assumed that the carrier of avirulent diphtheria bacilli does not constitute a menace to the health of the community

Bloomfield[8] attempts to reconcile what may seem like conflicting views on the theory that the carrier state depends on a focus of diseased tissue which affords a breeding place for the bacteria The tonsil may come into play here He finds no evidence to indicate that any adaptation takes place between the bacilli and the mucous surfaces, leading to actual growth and multiplication on these surfaces They react just as the normal mucous membranes do

In this connection the vasomotor reactions of the mucous membranes of the pharyngeal and nasal cavities may be called Mudd, Goldman and Grant[9] have shown that vasoconstriction and ischemia are caused reflexly in these membranous surfaces by chilling of the outside of the body, and the temperature change may amount to several degrees What such reactions may mean for the establishment of infections of the nose and throat remains to be seen[10]

THE COST OF TUBERCULOSIS

The arguments in support of movements for the conservation of human life and the improvement of the public health are no longer based solely on humanitarian considerations or purely philanthropic motives, however worthy and defensible these may be The waste of human life through untimely death or disabling disease is an economic loss capable of being estimated in tangible figures in some cases, and always deserving of careful consideration To the individual the conservation of the capacity for personal achievement, a performance in which good health plays an undeniable part, makes the strongest appeal To the nation and the public at large the enormous cost of lowered efficiency and preventible or remediable disease is becoming more and more apparent During the war our people were startled by the degree of physical insufficiency revealed by civilized men in many parts of the world Hence one can well understand former President Taft's reminder that human vitality lies at the foundation of national strength, that is, underneath our power to furnish the money, munitions, food, ships, machinery and morale which won the war we find the great fundamental requirement of sound bodies and minds

Statisticians[1] have recently computed the losses in expectation of life in the case of tuberculosis The importance of the disease from this standpoint is indicated by the extent to which it shortens the average span of human life According to the studies made by the Metropolitan Life Insurance Company and the National Tuberculosis Association, tuberculosis is a powerful antilongevity force among insured wage earners for whom dependable statistics are obtainable White males lose 3 5 years in all, or 7 6 per cent of their entire expectancy The heaviest losses occur among the colored people, they lose an average of about five years of life because of the inroads of this disease On the whole, males lose more heavily than females from tuberculosis Again, we are told[1] that at age 20, when productive life is well started for most persons, tuberculosis reduces the expectancy 3 7 years among white men, 2 3 years among white women, 4 4 years among colored men and 3 7 years among colored women At age 40, the years lost are from one-third to one half as many as at age 20, and at age 60 and thereafter the losses cease to have an important effect on longevity, although the death rates from tuberculosis continue to be high, even at these advanced ages

What may this loss in expectation of life represent in terms of estimated money losses? If we agree with the experts who have busied themselves with this problem that a loss of one year of life is equivalent to a money loss of not less than $100 in national wealth, a tenable figure can readily be arrived at Tuberculosis mortality cuts approximately two and one-half years from the complete life expectation of every individual under present mortality conditions This represents, on the basis just cited, a loss of $250 per person, in our population of more than a hundred millions, the figures run into billions of dollars As Dublin and Whitney have summarized the data The present generation would add that much more net wealth if tuberculosis were not a factor in mortality Since the average lifetime is approximately fifty years in the United States, this loss means an annual charge in excess of five million dollars from the curtailed longevity of individuals because of tuberculosis

But this is not all Sickness and disability for work represent outlays and losses that are scarcely calculable in concrete ways The New York City Association for Improving the Condition of the Poor has found that a tuberculous family was under care, on the average, for a period of two years, four and one-half months, and that during this time the families suffered a wage loss of $836, and the association contributed $1,181 in relief and care

Data such as these deserve to be familiar to the members of the medical profession, on whom more than all others the burden of defending public health work now

8 Bloomfield A I The Mechanism of the Carrier State with Special Reference to Carriers of Friedländer's Bacillus Bull Johns Hopkins Hosp 32: 10 (Jan) 1921

9 Mudd S Goldman, A and Grant S B J M Res 40: 53 (May) 1919, J Exper Med 32: 87 (July) 1920 Vasomotor Reactions of the Nasal Cavity and Postnasal Space to Chilling of the Body Surface Am J Physiol 55: 297 (March) 1921

10 Mudd, S, Grant, S B and Goldman, A The Histology of Acute Inflammations of the Nose, Pharynx and Tonsils, J Lab & Clin Med 6: 175 (Jan) 1921, 6: 253 (Feb) 1921, 6: 322 (March) 1921

1 Dublin L I, and Whitney Jessamine The Costs of Tuberculosis, Quart Pub Am Statistical Assn, December, 1920, Am Rev Tuberc 5: 178 (April) 1921

rests The slow progress in the warfare on tuberculosis is sometimes discouraging to those who are expected to support it in concrete ways It is not always possible to rally their indispensable support by an appeal to the noticeably decreased mortality from the disease in the last quarter century It is true that in 1890 the death rate per 10,000 living in the U S Registration Area was 24 5, and in 1915, only 12 3 Despite such differences the disease is still rampant To many the failure of science to discover the eagerly anticipated "cure" which the popular mind has been led to expect since the days of Koch's original tuberculin has been disheartening Figures to which the dollar sign can be prefixed speak with great force The figures cited in connection with the costs of tuberculosis should be counted on to help in securing a continuance of the efforts to eradicate or ameliorate the great scourge

Current Comment

TRYING TO KILL THE MILK COMPOUND INDUSTRY

Until within recent years, vast quantities of skim milk were wasted or its food value used in uneconomical and unscientific ways Then there developed an industry for the purpose of making such skim milk more available to the consuming public by adding to it edible fats or oils from other sources These milk compounds, obviously, could not and did not take the place of milk as an infant food, they did, however, furnish an inexpensive and valuable food, and because of these qualities they quickly attained public favor Since they have become popular—or possibly *because* they have become popular—certain competing interests have attempted to bring about legislation which, for all practical purposes, would eliminate milk compounds from the market Such legislation was attempted in the states of Washington, New York, New Jersey and Pennsylvania, but the bills failed of enactment More recently, such legislation has been pushed in Wisconsin, and the law has passed both houses of the Wisconsin legislature The fight is now being carried to Congress, and three bills have been introduced which, if enacted, would practically destroy the milk compound industry of the United States With the trade fight—for such it is—the medical profession is not concerned Those that are attempting to destroy the business, however, are doing so largely under the guise of protecting the public health The arguments are fallacious Such compounds of skimmed milk and vegetable oil as are on the market, so far as we know, are frankly and honestly labeled, and are advertised for what they are In at least some instances, the label specifically declares that they should not be used for infant feeding, but recommends them for cooking and baking, and expressly defines them as mixtures of evaporated skim milk and vegetable fat In skim milk we have protein in one of its most valuable forms If wholesome edible fats of vegetable origin can be added to skim milk and thus make mixtures that are available as inexpensive food or cooking accessories, every consideration of public health and economics favors such mixtures, provided they are frankly and honestly labeled for what they are The present legislation pending in Congress directed toward the extermination of milk compounds of this character is without justification from the public health standpoint

THE ANTIPHLOGISTIC ACTION OF CINCHOPHEN

Since the work of Luithlen[1] in 1911 and 1913, pharmacologists have known that calcium salts prevent mustard oil chemosis in rabbits, and that indifferent colloids, such as gelatin, silicic acid and serum, and even venesection, exert a beneficial influence on croton oil inflammation of the skin in cats Januschke[2] added quinin, antipyrin, morphin and salicylate, and Wiechowski and Starkenstein[3] included cinchophen in the list of antiphlogistic agents Later, Starkenstein[4] elaborated especially on cinchophen, claiming extraordinary antiphlogistic powers for this substance in various clinical conditions However, the great variety of drugs that have been found to act similarly indicates that there is nothing peculiar or specific about cinchophen in this respect Its alleged greater efficiency as an antiphlogistic agent would require confirmation by more convincing evidence than has been offered thus far This doubt has been confirmed recently in a report by German pharmacologists and chemists in connection with their studies of poisoning by war gases Lacquer and Magnus[5] have demonstrated that the mortality of cats suffering with pulmonary edema from the inhalation of phosgen was greater when they were treated with cinchophen and salicylate than that of the untreated controls Heubner and Gildemeister[6] could not confirm the antichemosis action of cinchophen in cats, as claimed for rabbits by Starkenstein and Wiechowski On the other hand, 5 per cent calcium chlorid injected subcutaneously half an hour after poisoning was found to alleviate the pulmonary edema from phosgen, increasing the survival of cats from 20 per cent in the untreated to 40 per cent in the treated series, and both calcium chlorid and strontium chlorid prevented mustard oil chemosis in these animals definitely A weaker solution (1 per cent) of calcium chlorid was about as effective, increasing the survival of phosgenized cats from 12 to 45 per cent Therefore the extent to which cinchophen actually contributes to the relief of chemosis even in rabbits after the factors of antipyresis and natural recovery are taken into consideration may be doubted The work of Magnus and his associates shows the danger of transferring results directly from one species to another, and especially from animals to human individuals with such conditions

1 Luithlen F Wien klin Wchnschr 1913 No 17 1911 No 20
2 Januschke H Wien klin Wchnschr 1913 No 22
3 Wiechowski and Starkenstein Munchen med Wchnschr 1913 No 2
4 Starkenstein Therap Monatsh **31** 49 189 1917 Therap d Gegenw 1918 p 289 Munchen med Wchnschr 1919 p 203
5 Lacquer E and Magnus R Ztschr f d ges exper Med **13** 200 1921
6 Heubner R and Gildemeister M quoted by Lacquer and Magnus (Footnote 5)

as pulmonary edema and congestion, without due consideration of well known factors that can modify the progress of disease The same applies to a recent statement of Meyer and Gottlieb,[7] who seem to regard the experimental results with antiphlogistic agents, including cinchophen, to agree with the beneficial therapeutic results reported in rheumatic and catarrhal inflammation, angina, laryngitis, bronchitis, pleuritis, etc, and not merely as symptomatic, but actually as etiologic or causal remedies

PRESUMING TO SPEAK FOR SCIENTIFIC MEDICINE

From a newspaper standpoint, the Eighteenth Amendment and the Volstead Act are still "front page" topics, and any pronouncement on the question of prohibition is "live news" These facts doubtless explain and excuse the publicity which the newspapers are giving to the "Allied Medical Associations of America," which is having a convention this week in Atlantic City It is not necessary to tell physicians what the Allied Medical Associations of America is—or should it be *are?* This hybrid organization was dealt with at length in the Propaganda Department of THE JOURNAL, July 5, 1919 At that time the organization was reported as adopting a resolution declaring that "properly brewed lager beer is absolutely essential in the treatment of certain cases" At its present meeting the newspapers report that the Allied Medical Associations of America is calling on its members "to unite in an effort to repeal the Volstead Act" THE JOURNAL'S previous article on this "association" closed with these words

> Any resolution or expression of opinion by this organization or others of its type when dealing with the broader problems of public health, is wholly without scientific significance, whether such resolutions are good, bad or indifferent

While written in July, 1919, not a word needs changing to make it applicable to July, 1921 That the press and the public may be able to evaluate the Allied Medical Associations of America it should again be emphasized that that organization does not represent scientific medicine in America

NO SHORTAGE OF PHYSICIANS IN THE UNITED STATES

At the recent meeting of the American Institute of Homeopathy in Washington, the statement was made, according to newspaper reports, that "the United States is suffering a shortage of 25,000 physicians," and that special efforts should be made "to induce young men to study medicine" As has been repeatedly stated in these columns, there is no shortage of physicians in the United States, at least so far as numbers are concerned Based on figures of the recent census and on figures in the last American Medical Directory, the United States still has one physician to every 726 people It is true that with the improvements in medical education in the United States during the last fifteen years, there has been a reduction in the number of medical colleges, but there is still an adequate quota to supply easily the number of physicians annually needed Even under the higher educational standards, the annual number of graduates is again rapidly increasing —an increase which has not required any "special effort to induce young men to study medicine" Meanwhile, the only demands for physicians are coming from rural or sparsely settled districts to which physicians are not attracted, or where they cannot, or think they cannot, make a living These communities will not be provided with physicians by a return to lower standards of medical education, or by swelling unduly the enrolments in medical schools The problem will be solved if the physicians in towns and cities who are barely making a living can be induced to locate in rural districts The number of physicians in the United States is adequate, the problem is one of distribution But that is another story

7 Meyer H H and Gottlieb R Experimentelle Pharmakologie Ed 5 Urban and Schwarzenberg 1921

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES NEW HOSPITALS EDUCATION PUBLIC HEALTH ETC)

ALABAMA

Annual Meeting and Barbecue—The Coffee County Medical Society held its annual meeting June 2 at Bass Pool In addition to the presentation of a practical scientific program an elaborate barbecue was served to the members and guests of the society

CALIFORNIA

Personal—Dr Harold W Wright, San Francisco has been elected president of the California Society for Mental Hygiene ——Dr William A Sampson, San Francisco, was recently appointed as head of the Potrero Emergency Hospital, San Francisco Beginning July 1, the hospital will again receive surgical cases

Drive for Radium Fund—A campaign was launched last month to raise $50 000 for the purchase of radium which will be used in two new cancer wards to be established at the San Francisco Hospital Persons suffering from cancer at present are taken to the University of California for radium treatment

CONNECTICUT

Yale Medical Alumni Association—At the annual meeting of the Yale Medical Alumni Association held, June 20 Benjamin Austin Cheney '88 '90 Med, was chosen as president, Simon B Kleiner, '15 Med, secretary It was reported that work on the new medical and pediatric laboratory would be started by July 1

Honorary Degrees Conferred at Yale—At the commencement exercises at Yale University, June 22 the honorary degree of Doctor of Science was conferred on Dr Hideyo Noguchi, member of the Rockefeller Institute for Medical Research, scientific investigator and author, and on Madame Marie Curie, scientist and discoverer of radium

Legislative News—A bill entitled 'An Act Concerning Defrauding General Hospitals" which gives hospitals the same protection that is given hotels, was recently passed by the legislature and has been signed by the governor Another act, which only awaits the governor's signature, provides for the establishment of a state clinical standard thermometer to be supplied by the state and certified by the National Bureau of Standards

DISTRICT OF COLUMBIA

Personal—Dr Isaac S Stone, Washington, was given the honorary degree of Doctor of Laws by Georgetown University, at its annual commencement exercises, June 14 Dr

Stone is now professor emeritus of gynecology in that university ——Dr J A Hill New Hampshire, has been made assistant director of the census,——Dr Michael E Gardner has been appointed chief of the bureau of preventable diseases and director of the bacteriologic laboratory of the health department.

Willis Antibeer Bill—Senator Willis of Ohio introduced a bill in the Senate to prevent the sale of beer for medical purposes The measure is identical with the Volstead bill introduced in the House and favorably reported by the judiciary committee with the exception that it limits the amount of wine to be prescribed by a physician to one-half pint every ten days The Willis antibeer bill was presented as a result of the refusal of the Committee on Rules of the House to make the Volstead bill a special order of business in the House of Representatives so that it could be quickly passed by that body The plan now is to rush the Willis measure through the Senate and send it to the House so as to enact it into a law before the Secretary of the Treasury issues rules and regulations for the sale of beer on a physician's subscription thus opening up many breweries in the country for the manufacture of medicinal beer One of the points brought out by Senator Willis in the presentation of his legislation against beer for medicinal use is that not a single reputable physician has appeared before the House Committee of the Judiciary and testified that this beverage is a necessity in the cure of the sick One other provision in the Willis measure affecting the dispensing of liquor by physicians prohibited the issuance of more than 100 prescriptions within ninety days to any physician for the use of spirituous or vinous liquors as medicine unless an emergency exists

GEORGIA

University Institute Clinic—Emory University School of Medicine Atlanta, realizing the importance of the control of venereal diseases, has through the solicitation of Dr Joe P Bowdoin U S Public Health Service organized an institute-clinic for a week of intensive work confined to these diseases Six hours each day for six days will cover the subject for this experimental course It is offered free by the university Already over 300 physicians have matriculated, representing all sections of the state

Georgia School for Backward Children.—The school will soon open at Gracewood, with Dr George H Preston in charge Equipment for the institution is now being purchased, and the coming legislature will be called on to pass the necessary maintenance fund The state has purchased the Tuttle-Newton Orphanage, about 8 miles from Augusta It is built on the cottage plan, the buildings are constructed of concrete and concrete block a farm of about 300 acres and pasturage with a splendid dairy, is ready The exact opening date has not been fixed

FLORIDA

Reorganization of Health Board—The state board of health recently appointed by Governor Hardee met, June 7, at Jacksonville, with all members present and completed its organization Dr Calvin P Young Plant City, was elected president Col Raymond C Turck Jacksonville, was appointed state health officer, to succeed Dr Ralph N Greene, resigned

IDAHO

Hospital News—The last legislature appropriated $70 000 for a model hospital at the Northern Idaho Sanitarium Orofino and the state is advertising for bids for the construction of the building

ILLINOIS

Outline for Birth Registration Test.—The department of health has just received for distribution 2 000 copies of a bulletin entitled "An Outline for a Birth Registration Test" Those interested in assisting the department to obtain complete birth reports may obtain the pamphlet by request

Meeting of Alumni Association—At the annual meeting of the Alumni Association, University of Illinois College of Medicine, held, June 10, at the Hotel Sherman, Chicago Lewis J Hammers, Lexington, '02, was elected president William M Crosier '07, Alexis, president-elect, John C M Krasa, '13, Chicago, secretary-treasurer

Additional Health Officers in State Service—An important measure enacted by the fifty-second general assembly is the provision for approximately twenty-five state health officers to be known as district health superintendents With the additional personnel referred to, public health administration in Illinois will compare more favorably with that in some of the other progressive states

Smallpox Epidemics—Rather sharp outbreaks of smallpox have occurred in several communities during the last few months In some instances the epidemics reached serious proportions owing to the diagnosis of primary cases as chickenpox and the consequential failure to resort to vaccination District health officers from the state department of health were assigned as medical referees and to investigate the smallpox situations at Grays Lake, Dupo, Illinois City Ottawa and Harvard Quarantine officers were also assigned for duty at most of these places General vaccination and rigid quarantine rules that were established brought the epidemics under immediate control

Better Babies Conference Announced—The state department of public health announces the dates for the sixth annual Better Babies Conference to be held in connection with the Illinois State Fair at Springfield Aug 19-27 1921 Arrangements have been made for examining at least 1 000 children and ample provisions made for the comfort and safety of mothers and children All examinations will be made by specialists in infant and child welfare In addition to the general Better Babies Conference to be held in connection with the state fair at Springfield, a number of local conferences, to be conducted under the direction of the state department of public health has been arranged

KANSAS

New Head of Kansas Medical School—Dr Ralph H Major has been elected head of the internal medicine department at the University of Kansas School of Medicine, Rosedale, Dr Major was formerly assistant at the Henry Ford Hospital Detroit

KENTUCKY

Personal—Dr Arthur T McCormack, Louisville, secretary of the state board of health was elected president of the Medical Veterans of the World War at their national convention held recently in Boston

MAINE

Incorporation of Public Health Association—The Maine Public Health Association filed its certificate of incorporation June 10 The president is Dr Elmer D Merrill, Foxcraft

MARYLAND

Appointment of Professor of Medicine in Johns Hopkins—Dr G Canby Robinson Baltimore, has accepted the post of professor of medicine at the Johns Hopkins Medical School and physician-in-chief of the Johns Hopkins Hospital, to succeed Dr William S Thayer The appointment becomes effective July 1 Dr Robinson is now professor of medicine and dean of the medical faculty of Vanderbilt University, Nashville Tenn and has been borrowed from that institution for one year with a distinct understanding that he is to return at the end of the year Dr Robinson is a graduate of the Johns Hopkins Medical School, class of 1903

Changes in the Johns Hopkins University Faculty—At the commencement of the Johns Hopkins University June 21, announcement was made of fifty-seven changes in the faculty In the Medical School and School of Hygiene and Public Health twenty-one new instructors and assistants were added to the medical staff, and eight new faculty members for the School of Hygiene——Dr Wade H Frost, former surgeon in the United States Public Health Service, was appointed professor of epidemiology and head of the department of epidemiology and public health administration in the School of Hygiene and Public Health——Dr Allen W Freeman, Columbus Ohio, was made resident lecturer in public health administration——Announcement was also made of the gift of $3 000 by Rev Dr George Scholl and Mrs Scholl as a memorial to their son the late Dr George Barr Scholl The income of the fund is to be devoted to medical research

Personal—Dr Allen W Freeman, state health officer of Ohio will succeed Sir Arthur Newsholme as resident lecturer in the School of Hygiene and Public Health of the Johns Hopkins University Dr Freeman is expected to assume his new duties July 1——Dr Calvin Goddard (Johns Hopkins Medical School, class of 1915) has been appointed second assistant director to the Johns Hopkins Hospital to succeed Dr A J Lomas, who recently resigned Dr Goddard is a resident of Birmingham Ala——Dr William H Welsh, director of the School of Hygiene and Public Health,

Johns Hopkins University, and Dr Florence R Sabin, professor of histology in the Johns Hopkins Medical School, will attend the dedication of the new buildings of the Peking Union Medical College, at Peking, China, in September —— Dr Hugh Hampton Young, director of the James Buchanan Brady Institute, Johns Hopkins Hospital, sailed, June 25 for Europe He will first go to Paris to attend a medical convention ——Dr Jacob Hall Pleasants, for several years chairman of the Board of Supervisors of City Charities for Baltimore City, and two other members of the board, have resigned in a body, expressing the conviction that their usefulness as members of the board is at an end ——Dr Harry M Stein has resigned as superintendent of the University Hospital and will leave, July 1 to enter private practice Dr T M Jones, a graduate of the University of Maryland Medical School, 1911 will succeed him as superintendent —— Dr John J Erwin, formerly of Fairmont W Va, has been appointed superintendent of Mercy Hospital and will take charge of the hospital, July 1 Dr Erwin has been a member of the staff at Mercy Hospital for the past year ——Dr J H Shrader of Washington D C has been appointed director of the Bureau of Food and Chemistry, Baltimore City Health Department, his appointment to become effective July 1

MICHIGAN

Physician Kills Man During Professional Call—It is reported that Dr Frank S Coller, Vicksburg, was arrested, June 20 on a charge of killing Robert B Thompson, Kalamazoo Dr Coller was called to treat a member of the family who had fainted during a violent family quarrel, and becoming involved in the fight, was struck by Thompson, and it is alleged that Dr Coller drew a revolver and shot him

MINNESOTA

Hospital News—A sanatorium will be erected in Hennepin County as a memorial to Mrs Lenora Hall Christian, at a cost of $160,000 for the treatment of tuberculous children Heliotherapy will be a feature in the care of the children

Organization of Former Members of Field Hospital No 135—A permanent organization of the club originally organized at Recey-Sur-Ource, France, June 25, 1917, was effected in St Paul, June 14 Its members, who fought through two years of the war together, are nearly all of St Paul

Personal.—The degree of Doctor of Laws was conferred on Dr Charles H Mayo, Rochester, at the commencement exercises of Northwestern University, June 15——At the commencement exercises of the University of Minnesota, the degree of Master of Science in Surgery was conferred on the following Fellows in the Mayo Foundation Leo P Bell, James M Hayes, Ernest M Johnstone, George D Mahon A H Osterberg, Frederick R Sanderson and G E Dutton

Antirabic Treatment Discontinued—The last legislature abolished antirabic treatment because only one outbreak of rabies in animals has occurred within the state in the last eighteen months The preparation of antirabic vaccine has been so developed that the material is at present being prepared and sold at a reasonable price The state board of health will continue to advise regarding treatment and will make laboratory diagnosis in suspected cases of rabies in animals when human beings have been exposed to infection

Transfer of Health Board Work to State Hospital—On recommendation of the state board of health, the last legislature transferred the poliomyelitis after-care work to the State Hospital for Indigent Crippled and Deformed Children Physicians are asked to report all suspected cases of acute poliomyelitis and epidemic meningitis directly to the Division of Preventive Diseases, University Campus, Minneapolis Suspected cases of epidemic encephalitis are also to be reported An epidemiologist will be sent to assist in diagnosis and control of disease Antimeningitis serum will be sent immediately on notification of meningitis cases

MISSOURI

Medical College Law Suspended—The referendum on the medical college law passed at the last session of the legislature was completed, June 19, and the operation of the law will be suspended until November, 1922, when it will be submitted to a vote of the people The law removes from the statute the word "reputable" as applied to medical colleges, the referendum being invoked to retain this word in the law In the campaign for signatures an aviator was employed to carry petitions to the capital and a fast automobile run was made over a distance of 100 miles in order to get some signatures to the secretary of state before the expiration of the time limit

Mock Funeral of Medical Standards—Fourteen East St Louis (Illinois) physicians attended a meeting of the St Louis Medical Society, May 31, and in a serio-comic vein performed the funeral rites over the imaginary casket which was supposed to contain the remains of the high standard of medical education in Missouri The occasion furnished an opportunity for stimulating interest in the referendum and reviewing the progress of scientific medicine in Missouri during the last quarter of a century Dr Joseph Grindon and Dr Albert H Hamel, St Louis, spoke on this subject Dr Jonathan L Wiggins and Dr Henry A Cables of East St Louis made interesting talks on the fight in Illinois for high medical standards

NEBRASKA

Postgraduate Course at Omaha—The University of Nebraska College of Medicine in conducting a postgraduate course for physicians in the University Hospital, Omaha, from June 20 to July 1, inclusive Emphasis is placed on physical diagnosis, including neurologic examinations, diseases of the stomach and intestines, and fractures

NEW JERSEY

State Medical Meeting—The one hundred and fifty-fifth annual convention of the Medical Association of New Jersey was held June 14-16, at Atlantic City, under the presidency of Dr Philander A Harris Patterson The following officers were elected for the ensuing year president, Dr Henry B Costill Trenton, vice presidents, Drs James Hunter, Westville, Wells P Eagleton, Newark, and Alexander McAllister, Camden corresponding secretary, Dr Harry A Stout, Wenonah, recording secretary, Dr William J Chandler, South Orange, treasurer, Dr Archibald Mercer, Newark Dr David C English, New Brunswick, was unanimously reelected editor of the state society's journal The society decided to fight any effort to lower the standard demanded of practitioners of every sort through legislation which would weaken existing laws

NEW MEXICO

State Board of Medical Examiners—At the regular meeting of the board, April 11-12 the following officers were elected to serve two years president Dr William T Joyner, Roswell vice president, Dr William H Lovelace Albuquerque, secretary-treasurer, Dr Robert E McBride, Las Cruces The other members of the board are Dr James A Massie, Santa Fe, Dr Harry A Miller Clovis, Dr Creighton H Ferguson Tucumcari, and Dr Carey B Elliott, Raton The board adopted a resolution amending the rule that medical colleges in Class C, as classified by the American Medical Association, will not be recognized by the state board of medical examiners

NEW YORK

Personal—Dr Herman G Weiskotten, county necrotomist and professor of pathology at the College of Medicine, Syracuse University, was elected president of the alumni association of the college at the annual meeting held June 4 It was decided at the meeting to start a campaign in the fall to raise a $1 000 000 endowment fund for the support of the college

New York City

Personal—Dr William R Williams and Dr Henry C. Thacher sailed for Europe, June 18

Awards of Prizes for Essays—The New York Diagnostic Society announces the following prize essay awards for the 1920 contest first prize, $300 in gold to Dr F Thompson Leys second prize, $150 in gold to Dr Clinton Lake Potter, and third prize, $50 in gold to Dr Homer E Smith The subject was Group Diagnosis," and sixty-one essays were submitted

For Speech Defects—The New York Free Clinic for Speech Defects has had its charter amended, changing its name to the National Hospital for Speech Disorders The hospital is located at 143 East Thirty-Seventh Street, and has just initiated a campaign to raise a building and endowment fund of $1,000,000 It is planned to make the institution a training center in this field as well as a thoroughly equipped hospital for the treatment of all speech disorders The hospital is a combination of school, clinic hospital and social center It receives patients from all parts of the country

NORTH DAKOTA

State Medical Meeting—The annual meeting of the North Dakota Medical Association was held, May 26-27, at Fargo The following officers were elected for the ensuing year president, Dr Harley E French, University, president-elect, Dr Eric P Quain, Bismark, vice presidents, Drs William C Fawcett, Starkweather and John H Rindlaub, Fargo, secretary, Dr Hezekiah J Rowe, Lisbon, treasurer Dr James P Aylen Fargo, recommendations to the governor for appointment on the board of health and state medical examiners Drs Henry G Woutat George M Williamson, Grand Forks and Dr Victor J LaRose, Bismark Minot was chosen as the place of meeting in 1922

OHIO

Physician Sentenced for Violation of the Law—Dr Moritz Loewenthal, Cleveland, has been sentenced to pay a fine of $2,000 and serve four years in the Atlanta penitentiary for violation of the Harrison Narcotic Law by providing morphin for addicts

Personal—Dr John A Kappelman has resigned as health commissioner of Canton, Ohio Since September, 1919, the personnel of the state health department has been increased from six to sixteen, and the health appropriation increased from $15 000 to $50,000 per year while the death rate decreased from *11 6 in 1919, to 10 2 in 1920*

Gift for Medical College—Dr Charles P Thwing presented his resignation as president of Western Reserve University, June 14, after a period of thirty-one years' service, to devote his time to authorship At the same time it was announced that Samuel Mather had presented the university with a check for $500 000 to be used for the construction of a building for the medical college It is estimated that the medical college and its endowment will cost $5,500,000

OREGON

Hospital News—The corner stone of the new Wilcox Memorial Hospital, Portland was recently laid, and it is expected that the building will be ready for occupation about the first of the year 1922 It is to be a maternity unit of the Good Samaritan Hospital, and was made possible by the donation of $125 000 by Mrs Thomas Wilcox, in memory of her husband

New County Medical Society—At the reception smoker given, May 10 in honor of Dr Alpha E. Rockey, Portland there was formed the Jackson County Medical Association At the last meeting, May 18, a permanent organization was effected, with the following officers president Dr Elijah B Pickel, Medford, vice president, Dr Francis G Swedenburg, Ashland, secretary-treasurer, Dr P Holt, Medford

PENNSYLVANIA

Philadelphia

Statue of Dr Leidy Unveiled—June 18, graduates of the University of Pennsylvania paid a lasting tribute to the late Dr Joseph Leidy, who at one time was professor of anatomy at the institution when they unveiled a bronze statue in his memory at the university s medical laboratory building A group of his former pupils was responsible for the idea of honoring the celebrated physician, and when they announced their plan, they were joined by hundreds of other graduates who though they failed to come in contact with Dr Leidy during their time at the university nevertheless learned to revere him. The statue stands at the foot of the stairway in the medical laboratories building, and it is a striking character study of the honored teacher

Resignations at University of Pennsylvania—Dr Alonzo E Taylor and Dr George M Piersol, professors in the Medical School of the University of Pennsylvania, have resigned and their resignations have been accepted at the monthly meeting of the board of trustees Dr Taylor will go to the University of California, where he is to conduct special research work on the subject of nutrition Throughout the war Dr Taylor and Herbert Hoover collected interesting material on this subject while investigating European food conditions That material will furnish the basis for a series of experiments to be made by Dr Taylor Dr Piersol has been professor of anatomy at the university for thirty years, and has now reached the retirement age and desires to devote himself to research in his specialty

Personal.—Dr Edward F Corson has been elected associate in dermatology, Jefferson Medical College and chief of clinic dermatologic dispensary, Jefferson Medical College Hospital——Dr A Strauss has been elected demonstrator in dermatology, clinical assistant to the dermatologic dispensary and chief of the syphilis clinic——Dr Henry G Munson has been elected instructor in dermatology and assistant dermatologist to the Presbyterian Hospital——Dr D Mitchell Sidlick, Camden, N J, has been elected instructor in dermatology and assistant clinical dermatologist to the Children's Hospital, Philadelphia——Dr Maurice Brown has been elected instructor in dermatology, and Dr Maurice L Mallas has been elected assistant demonstrator of dermatology—— Dr H Brooker Mills sailed, June 25 for Europe, as a delegate from the American Child Hygiene Association to attend the meetings of the International Conference on Child Welfare to be held in London the first week of July Dr Mills will also attend the section on diseases of children of the British Medical Association, the third week in July in Newcastle-on-Tyne, as a delegate from the American Medical Association

SOUTH DAKOTA

State Medical Meeting—The South Dakota State Medical Association held its convention, May 24, at Aberdeen The following officers were elected president Dr George I Adams Yanktown, vice presidents Drs Gilbert G Cottam, Sioux Falls, Francis E Clough, Lead and Robert L Murdy, Aberdeen, secretary-treasurer, Dr Frederick A Spafford, Flandreaux The constitution recommended by the American Medical Society, with a few changes to meet local conditions, was adopted

TENNESSEE

Tuberculous Children to Be Excluded from Public Schools—The last legislature passed a law excluding children having tuberculosis from attending the public schools of the state and providing that under certain conditions the city or county board of education shall make provision for their education

Legislation with Regard to Venereal Diseases—The last legislature made compulsory the reporting of every case of venereal disease and also the reporting of the transfer of treatment of each case both by the physician who had the case and the one who receives it The law enables physicians to have patients cited before the city court for penalty if they fail to comply with the law that makes reporting for treatments compulsory The law is now in operation A clinic has been provided at the Knoxville Public Health Center for a diagnosis and treatment, absolutely free of charge, of those who are unable to pay

TEXAS

Medical Scholarships—A gift of $25,000 to be used for the creation of two scholarships—one for the Texas Woman's College and one for the Medical College of the University of Texas at Galveston—was subscribed by Mr and Mrs Williams, Galveston, in honor of their son Wingo, who completed his course in Texas University and at the Medical College at Galveston The fund will be known as the Wingo Williams Memorial Scholarship Fund

CANADA

Personal—Dr Harley Smith, Toronto, has returned from a visit to the Mediterranean and France——Dr Victor Moorhouse Toronto is removing to Winnipeg——Dr Charles A Hodgetts Ottawa, has been appointed director-general of the Canadian branch of the St John Ambulance Association, and will have charge of the activities of the association from coast to coast

Coroners in Toronto—With the recent death of Dr Arthur Jukes Johnson of Toronto, the office of chief coroner for Toronto is to be abolished, and the holding of inquests hereafter will devolve on magistrates Under the present system the office of coroner in Ontario has always been considered a plum of patronage for the political party in power and coroners have therefore been appointed by the government Under the new arrangement, when adopted, some sixty coroners who are always members of the medical profession will be affected in Toronto alone, and likely four will be retained to do the work heretofore divided among the sixty Four pathologists will be appointed to do the postmortem work.

GENERAL

Personal.—Dr Hideyo Noguchi, of the Rockefeller Institute for Medical Research in New York, on June 15 received the honorary degree of Doctor of Science from Brown University——Dr Oswald T Avery of the Rockefeller Institute received the honorary degree of Doctor of Science from Colgate University

Meeting of the Medical Library Association—The twenty-fourth annual meeting of the American Medical Library Association, the members of which include all the larger medical libraries of the country, was held in Boston June 6-8 In addition to the address of the president and other papers, the program contained the report of a committee on standard classification, and the system used in the Boston Medical Library, and this, as explained by the chairman, was adopted as being the most practical solution for meeting the perplexing problems of classification Visits were made to the various libraries in Boston Of particular interest was an exhibit of rare medical items from the library of Dr Edward C Streeter of Boston, spread in the exhibition room of the Boston Public Library The exhibit was specifically epidemiologic, the essential literature on fevers from Hippocrates to Lancisi, with a few sections such as plague, syphilis and venesection superadded The permanent headquarters of the Medical Library Association are in the Medical and Chirurgical Faculty Building, 1211 Cathedral Street, Baltimore

Dedication of Peking Medical College—Plans have been announced for the dedication of the new building of the Peking Union Medical College, erected by the China Medical Board of the Rockefeller Foundation The ceremonies will fill the week, September 15-22, and will include an international medical conference to which scientists from America and European countries, as well as from the Far East, have been invited At the same time will occur the inauguration of the director of the college, Dr Henry S Houghton, and regular sessions of the institution's board of trustees, which is composed of representatives of the Rockefeller Foundation and of six missionary societies, which have maintained an earlier medical college in Peking The Peking Union Medical College had its beginning in the Union Medical College, founded in 1906 by the joint efforts of six British and American missionary societies The property of the earlier school was transferred 1916 to the China Medical Board of the Rockefeller Foundation which has purchased additional land, and erected, in an interesting adaptation of classic Chinese architecture, a series of hospital and laboratory buildings The institution comprises not only the medical school, but also a 250-bed hospital with outpatient clinics a nurses' training school, and a premedical school—an institution of junior college grade with a distinct faculty and group of laboratory and classroom buildings

LATIN AMERICA

Gift of Collection of Mosquitoes—The Brazilian Museum Nacional recently presented the medical faculty of the University of Buenos Aires with a collection of Brazilian mosquitoes

Election of Officers—The Brazilian Sociedade de Neurologia Psychiatria e Medicina Legal recently elected Dr Rodrigues Caldas, vice president, Dr U Vianna, secretary-general, and Drs H Carrilho Adauto Botelho and O Gallotti, secretaries, and Dr W de Almeida, treasurer Prof Juliano Moreira is the perpetual president of the society

Founding of Brazil Gynecologic Society—The *Folha Medica* announces the organization of the Sociedade de Obstetricia e Gynecologia do Brazil, with Rio de Janeiro as its headquarters and the *Revista de Gynecologia*, now in its fifteenth year as its official organ The officers elected are Prof F Magalhães, president, Dr F Vaz and Dr Oliveira Motta, vice presidents, Dr Clovis Correa da Costa, secretary-general, and Drs Lafayette Vieira and Arnaldo de Moraes secretaries, with Dr Alvaro Gusmão, treasurer, and Dr Didimo Napoleão, director of the museum

Personal—Dr J A Presno y Bastiony, director of the *Revista de Medicina y Cirugia* of Havana, has been commissioned by the government of Cuba to visit the medical centers of Europe to study recent progress in methods of teaching anatomy and operative medicine——Dr Rocha Vaz is acting as professor of clinical medicine at the University of Rio in place of Dr Azevedo Sodre who has been elected member of the house of deputies from the Rio district The latter is editor of the *Brazil-Medico* Dr Oscar Clark is serving in the same way in the place of Prof Aloysio de Castro who is at present on a mission to Uruguay——Dr H de Souza Araujo has been appointed in charge of the public health work in the Para district of northern Brazil as part of the new organization of Prophylaxia Rural of which Dr Chagas, now visiting in this country, is the chief

Tribute to Morquio—The twenty-fifth anniversary of the incumbency by Dr Luis Morquio of the chair of pediatrics at the University of Montevideo was celebrated with much ceremony recently by his pupils and other friends, including a delegation of five pediatrists from Argentina Morquio's name is well known to the readers of THE JOURNAL from the summaries of his numerous contributions on diseases of children in Latin-American and French journals, and as co-editor of the *Revista Medica del Uruguay*, and director of the *Archivos Latino-Americanos de Pediatria* In the morning a plate bearing his name was placed on the infectious diseases pavilion of the Children's Hospital, and a souvenir bound volume of his works was presented The deans of the medical faculties of Rio de Janeiro and of Buenos Aires delivered addresses at the afternoon tribute gathering, the ceremonies concluding with a banquet in the evening

FOREIGN

Italian Hospital at Alexandria—The sum of 20 000 liras (Egyptian) having been subscribed, work has already been begun on the Italian hospital planned for Alexandria There is already an Italian hospital at Cairo

Publication of Theses in Prussian Universities—The *Deutsche medizinische Wochenschrift* states that the universities of Prussia have decided to publish at the close of each college year a volume containing summaries of the theses presented during the year, instead of publication of the theses individually

Vaccination Against Typhoid—The Academy of Medicine at Paris has officially voted in favor of vaccination of the general population against typhoid, especially in endemic foci, and in epidemics In the latter case it was specified that children and the aged should be included in the vaccination The resolution also specified that in reporting cases of typhoid it should always be specified whether the subject had been vaccinated before, and the number of times and the modes

Expositions on Child Welfare in France—The American Red Cross has just terminated successful expositions on child and infant welfare held at Lille, Roubaix and Tourcoing in the Department of the Nord These three cities form practically one group, being connected by short trolley runs, and are important industrially, but are still seriously crippled by the damage done during the period of German occupation The entire Department of the Nord is notable for its large families and serious attention is being given to maternal and infant hygiene and the physical development of the child The medical director Dr T C Merrill and the assistant physician Dr Hazel Bonness, were elected honorary members of the three syndicats medicaux of Roubaix, Lille and Tourcoing

The Carnegie Hero Medals in France—The *Vie Medicale* relates that the French branch of the Carnegie Foundation for awarding medals in token of appreciation of heroism heads the list with the names of three French roentgenologists Dr Leray, who succumbed last March to the effects of his excessive roentgen-ray work for the wounded during the war, C Infroit who suffered one amputation after the other for injuries dating from his pioneer work as roentgenologist at the Salpetriere He had undergone twenty-four operations and for the last year or two before his death in 1920 had worked with artificial arms These two martyrs were given a gold medal The third recipient, M Vaillant, is still in charge of the roentgen-ray laboratory at the Salpetriere He has had ten operations performed in the last ten years, including amputation of several fingers, a hand and the left arm He has been given the sum of 50,000 francs in addition to the gold medal awarded the three

Deaths in Other Countries

Dr **Charles Porak**, until his retirement a leading obstetrician of Paris chairman of the permanent committee of the Academie de Medecine on welfare work for infants and young children aged 76——Dr **C A Wiebel**, one of the organizers and officials of the Leipzig League, and member of the reichstag, aged 55——Dr **Guarany Goulart**, second vice president of the Sociedade de Medicina e Cirurgia de Rio de Janeiro

CORRECTION

Circulation of Public Health Service Publication—In THE JOURNAL, June 18 it was erroneously stated that all publications of the U S Public Health Service would be reduced to 1 000 copies A correct statement of the fact is that all publications of the U S Public Health Service, excepting the Public Health Reports and reprints of same and bulletins of the Hygienic Laboratory, will hereafter be limited to editions of 1,000 each

Government Services

Secretary Denby Rules on Authority of Medical Officers

Secretary of the Navy Edwin Denby has disapproved the findings of a court martial convicting a lieutenant-commander of the line of disobedience to a medical officer The secretary sustained the contention of line officers of the navy that a medical officer commanding a hospital ship cannot give orders to a line officer charged with navigation of the ship The question arose in the case of Lieut-Com Athol H George United States Naval Reserve Force serving on board the hospital ship *Mercy* That officer was convicted by court martial of the charge of "disobeying the lawful order of his superior officer," Com William M Garton, Naval Medical Corps, commanding the *Mercy*, and sentenced to be dismissed from the service Secretary Denby disapproved the findings and announced that an officer of the Naval Medical Corps did not have the authority under the law to issue an order to an officer of the line of lower rank nor could he exercise military command over him This is a reversal of the position heretofore taken

Recommendations of Hospitalization Board

The Hospitalization Board appointed by Secretary Mellon of the Treasury Department, made its first report to the secretary for the expenditure of a portion of the $18 600,000 appropriated by Congress The Secretary of the Treasury promptly approved the recommendations They provide for the expenditure of $3 010,000 on seven hospital projects as follows

At U S Public Health Service Hospital No 55 Fort Bayard N M expenditure of $850 000 for construction of a permanent hospital unit of 250 beds and improvement of existing facilities

At U S Public Health Service Hospital No 42, Perryville Md expenditure of $500 000 for erection of buildings to accommodate 300 neuropsychiatric patients and improvement of existing facilities

At Fort Logan H Roots Little Rock Ark expenditure of $250 000 for remodeling the post hospital to provide for treatment of approximately 300 neuropsychiatric patients

At Lake City Fla expenditure of $300 000 for the construction of buildings and for improvements intended to be an addition of a tuberculosis unit of 100 beds

At Fort Walla Walla Wash expenditure of $450,000 for the construction of a general hospital of 150 beds

At Whipple Barracks Prescott Ariz expenditure of $600 000 for enlargement of the present hospital of 400 beds caring for tuberculosis patients

At Alexandria La expenditure of $60 000 to re erect buildings recently destroyed by fire

Army Appropriation and Medical Corps

The Army appropriation bill recently passed by Congress will have a material effect on the medical corps of the Army The measure provides for the reduction of the Army from 220 000 to 150 000 by the first of October, 1921 As the strength of the medical corps is based entirely on the actual strength of the Army, it was necessary for the Surgeon-General to bring about a reduction in the size of the medical department bringing the total enlisted personnel down to 4,000 less than its present number As it is impossible arbitrarily to discharge officers from the service the reduction in the commissioned personnel will have to be accomplished by absorption and by refusal to take new officers into the medical corps of the Army At the present time there are forty-seven officers of the Reserve Medical Corps on active duty and the probabilities are that these officers will be relieved unless they can be utilized in the care of disabled and wounded veterans of the World War The Army appropriation act provides in only one instance for the use of reserve officers in the medical department of the Army and that is in the case where hospitals of the Army are used for the treatment of former war veterans In an emergency of this sort the Surgeon-General is authorized to call reserve officers into active service to supply the necessary number of medical officers to render medical attention to the patients The discharge of the forty-seven reserve officers now on duty with the department will depend, of course, on whether the Surgeon-General decides to utilize them in these hospitals, treating disabled ex-service men, or whether he shall call in new reserve officers to active duty

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 27, 1921

The Protection of Roentgenologic Workers

The committee for the protection of roentgenologists, which was announced in a previous letter (THE JOURNAL, April 23, 1921 p 1181), has been formed The chairman is Sir Humphry Rolleston The members are Sir Archibald Reid, radiologist to St Thomas' Hospital, Dr Robert Knox, radiologist to King's College Hospital and the Cancer Hospital (representing the British Association for the Advancement of Radiology and Physiotherapy), Dr S Gilbert Scott, radiologist to the London Hospital, Dr Stanley Melville radiologist to St George s and to the Brompton Chest hospitals (representing the Electrotherapeutic Section of the Royal Society of Medicine), Dr Harrison Orton, radiologist to St Mary's Hospital, Mr Cuthbert Andrewes (representing the Rontgen Society), Prof S Russ, physicist to the Middlesex Hospital (representing the Institute of Physics), Dr G W C Kaye (representing the National Physical Laboratory), and Dr J C Mottram pathologist to the Radium Institute The committee held a preliminary meeting and appointed a subcommittee to draw up a statement, to be issued as a leaflet, on the means for the protection of the workers, giving advice as to the position of roentgen-ray rooms, their ventilation and cubic space, and on the need for making and observing rules governing the hours of work, outdoor exercise and holidays of workers The committee intends to collect data on the effect of irradiation with particular reference to protection, to carry out special research, to act in a consultative and, possibly, advisory capacity and to publish reports from time to time

The Washington Convention Concerning the Employment of Women Before and After Childbirth

The Ministry of Health has issued a memorandum by Sir Alfred W Watson, the government actuary, on this subject The convention provides that no woman (whether married or single) shall be permitted to work in any industrial or commercial undertaking during the six weeks following her confinement, and that if she is employed she shall have the right to leave her work on production of a medical certificate stating that her confinement will probably take place within six weeks While absent from work she is to be paid benefits sufficient for the healthy maintenance of herself and her child, and is in addition to receive free attendance of a physician or certified midwife Sir Alfred Watson says that, assuming it to be possible to apply a reasonable test of qualification the number of births among industrially employed women would probably be about 120 000 However, it would appear open to question whether in practice the benefits could be limited to employed women and it seems not unreasonable to assume that, following the adoption of the convention, there would spring up an immediate and an insistent demand for the extension of the benefits to mothers of every social class, irrespective of any question of employment Such a demand would be difficult to resist With a benefit fixed at no more than $5 a week, the cost for each woman would be $70, including $10 for medical attendance Whether a particular married woman would or would not return to work after her confinement it was impossible to determine, and indeed in many cases, unreasonable to ask Nevertheless some test would have to be applied if the right to benefit depended on the settlement of the point The choice of a test which was equitable, and at the same time easy to work had, in similar circumstances in the past, proved an insuper-

able difficulty If effective means of protection could be devised, the cost of the scheme would be about $8 500,000 a year, subject to two important conditions (1) That the benefit did not draw into the labor market a large number of married women who, otherwise, would never have sought industrial employment If this should happen, the cost above suggested might easily be doubled Other untoward consequences would also follow Competition for work would increase unemployment, promote casualization, and in the long run lower wages (2) That provision of the new benefit was not followed by an increase of illegitimacy The provision of an unconditional subsidy to maternity of employed women, represented by a benefit of several dollars, might have reactions in this connection If the benefits were universal at $70 for each birth, the cost would be more than $75,000,000 a year The convention lays down that the benefits are to be provided either out of public funds or by a system of insurance If the whole of the cost could be recovered from married women of child-bearing ages, it would be necessary to increase their contributions from 18 cents to about 48 cents, apart from the magnitude of the sum, it would be administratively impossible for the insurance contributions of married women (and even then only certain of them) to be different from those of other insured women If the new benefit was made universal, the cost of it could be provided as regards insured persons, by a general increase of the contributions of both men and women by something like 8 cents a week Such increase would probably meet with the strong opposition of the insured, and of the employers also if it was proposed to divide the burden

Decrease in the Number of Medical Students

At the General Council of Medical Education and Registration, the president, Sir Donald MacAlister, announced that the registration of medical students, which in 1919 rose to 3,420, in 1920 fell to the more manageable number of 2 531, and this number is still higher than in any year prior to 1919 It would be in the interest of sound professional education were the numbers still further reduced They impose a severer strain, educational and financial, on the schools and hospitals than the necessary recruitment of the profession demands, and in present circumstances the teaching institutions are less able to meet the strain To raise the educational standard for admission and to increase the fees for professional tuition, would thus seem from all points of view, to be prudent and justifiable In respect of dentistry, a profession which still needs a large accession of fully trained recruits, the registrations in the Dentists' Register number 217, as compared with 128 in the year before They still fall short of the annual number before the war New dental students, however, number 560 This, though somewhat less than in 1919, is (except for that year) the highest entry yet recorded

Census of India

The Indian census conducted, March 18, shows that during the decade 1911-1921 the population of the country (British India and native states) has increased only from 315 15 millions to 319 millions, or at the rate of only 1 27 per cent for the whole decade At the census in 1872 the population was returned at 206 millions, in 1881 at 253 millions, in 1891 at 287 millions, in 1901 at 294 millions, and in 1911 at 315 millions Down to 1901, the extent of territory under enumeration was always on the increase and the census statistics consequently ascribed a somewhat spurious vitality to the Indian population Even between 1901 and 1911, however, when the census area was approaching fixity, the increase was 7 1 per cent and it was generally believed that the census just concluded would exhibit a population of not less than 340 millions The shock afforded to statisticians by an increase in the Indian population of only 1 27 per cent over an entire decade is best realized by a comparison with France at the period of the greatest stagnation of its population Even between 1901 and 1911 the population of France increased from 38,962,000 to 39,601,000, or at the rate of 1 64 per cent for the decennial period India, the country in which the marriage of every girl on the attainment of maturity is a religious obligation and in which the average marriage is enormously prolific, has beaten the worst record of the country in which lateness and infertility of marriages is the subject of national lament What are the possible explanations? The influenza epidemic of 1918 accounts for much The number of deaths from influenza occurring in British India within the few months of the epidemic reached the appalling number of 4,899,725, and it was estimated that, including the native states, the mortality for the whole country exceeded six millions In a few months influenza claimed half as many victims in India as had been claimed by the bubonic plague during the whole twenty-two years since it first appeared in epidemic form To the results of the influenza epidemic must be added the mortality resulting from the plague and other epidemics, especially severe in Bombay The actual war mortality among Indian troops amounted only to 80,000, but doubtless the long absence from the country of what became ultimately a total of over a million men, as well as the effects of war on the fertility of the large number of wounded, counted for something in the slackened increase of the population A permanent cause of wastage is the high infantile mortality, which, even in some wards of the Calcutta municipality, exceeds one out of every four babies whose births were recorded during the war

Defective Instruction in Midwifery at the Indian Universities

For many years the medical diplomas of the Indian universities have been recognized as conferring a registrable qualification to practice medicine, surgery and midwifery in this country Recent inquiries have, however, caused the Council of Medical Education and Registration to raise the question of their present sufficiency in respect of midwifery It has been found that in most, if not all, of the Indian universities the prescribed courses of study and examinations in this branch do not now furnish a sufficient guarantee of the possession of the requisite knowledge and skill for the efficient practice of midwifery in the United Kingdom The council has communicated its opinion to the Indian universities and intimated that unless within a year the standard of their requirements in midwifery is raised to a satisfactory level, recognition must be discontinued

PARIS

(From Our Regular Correspondent)

May 27, 1921

Action of Anesthetics on the Liver

Clinicians have for a long time called attention to the frequency of changes in the liver caused by certain drugs used in general anesthesia, notably chloroform Dr Brule, in studying disturbances of the biliary function in persons anesthetized by ether and chloroform, has noticed that the disturbances which are ordinarily found associated with chloroform narcosis, whatever may be its duration do not occur with ether except during prolonged anesthesia Dr Widal, professor of clinical medicine at the medical school of the University of Paris, has undertaken, together with P Abrami and J Hutinel the study of hepatic changes due to anesthetics, by investigating the causes not only of biliary insufficiency but also of derangement of the proteopexic function of the liver Simply the observation of changes in the number of leukocytes occurring after the subject has drunk a glass of

milk makes it possible to trace the slightest functional changes of the liver (THE JOURNAL, Jan 22, 1921, p 275) The researches which they have presented to the Academy of Sciences bear partly on the three most important drugs employed in anesthesia chloroform, ether and nitrous oxid, and partly on a local anesthetic, procain

All drugs employed in general anesthesia produce lesions of hepatic cells The most sensitive and the most trustworthy evidence of this cellular change is a derangement of the proteopexic function of the liver It appears frequently before any other signs of hepatic insufficiency, and in certain cases it may develop independently without retention of biliary salts, and without urobilinuria Hepatic insufficiency is constant with the use of chloroform even when this anesthetic is used in small dosage With ether and nitrous oxid hepatic insufficiency is absent in anesthesia of short duration, but appears whenever the narcosis is prolonged On the contrary, the hepatic cell remains unharmed during anesthesia with procain Ordinary doses of from 0 10 to 0 12 gm of procain injected intraspinally, or even a dose of 2 gm injected subcutaneously, did not produce a disturbance of proteopexic function nor biliary retention

These results are important in general practice In persons with normal hepatic functioning before the operation, proteopexic insufficiency caused by general anesthesia does not seem to constitute a contraindication to the narcosis in ordinary operations This is a temporary disturbance which disappeared in a few days in all operated patients followed up It is interesting to note, however, that in persons suffering from hepatic defects and in whom there is danger of serious accidents arising after general anesthesia, owing to hepatic insufficiency, the use of a local anesthetic such as procain, even when injected in large doses, does not produce any functional changes of the liver

Compulsory Notification of the Still-Born

The Commission departementale de la natalite, of the Department of Isere, with the view of aiding in the suppression of abortion, has requested that notification of abortions to the state authorities be made obligatory for the physician and midwife attending the patient during confinement, whenever the fetus presents a distinguishable sex This measure would have an important bearing on the suppression of abortion, as at the present time the notification of the still-born, even in Paris where it is governed by a decision of the prefect of the Seine, exposes physicians wishing to perform it to numerous difficulties and proceedings

The Societe de medecine legale has also demanded that a law be enacted requiring the notification of abortions, and proposes that such law be made to read as follows Public notification is required by the Civil Code in all still-born cases and is obligatory for all persons compelled by the Civil Code to make notifications of births or of deaths This notification applies to all expulsions occurring before the end of term and having a human form

Death of Dr Emile Combes

Dr Emile Combes, senator and former president of the council of ministers, died recently at the age of 86 He was born at Rocquecourbe (Department of Tarn) in 1835 He pursued at first a course of study that would prepare him for an ecclesiastical career, but later he went to Paris and studied medicine He was made doctor of medicine in 1868, practiced in Pons, in 1875 became mayor of the town and in 1879 was elected general councilor of the Department of Charente-Inferieure He then devoted himself entirely to politics In 1885 he was elected senator, and held his post at every new election He was indefatigable in his attendance on the sessions of the senate, was a member of numerous committees, often the supporter of important bills, and acquired thus a position of importance in the senate He served as vice president of that assembly from 1894 to 1895 After becoming minister of public instruction, he played an important part in the organization of the *'defense republicaine"* and was selected by Waldeck-Rousseau to succeed himself at the head of the government (June 7, 1902) During the war he accepted the portfolio of minister of state

BERLIN

(From Our Regular Correspondent)

May 14, 1921

Thirty-Third Congress of the German Society for Internal Medicine

The thirty-third congress of the Deutsche Gesellschaft für innere Medizin was held in Wiesbaden, April 18-21 Detailed reports on the treatment of pulmonary tuberculosis were rendered by Professors Aschoff, Freiburg, Uhlenhuth, Berlin, Gerhardt, Wurzburg, de la Camp, Freiburg, and Brauer Hamburg

THE NATURAL HEALING PROCESSES OF PULMONARY TUBERCULOSIS

Aschoff first took up the more recent classifications of pulmonary tuberculosis as proposed by Eugen Albrecht, Albert Fraenkel and Nicol The necessity of a pathogenic classification that takes into account not only the localization of the lesions but also the character of the reaction processes is emphasized The localized defensive processes are productive and exudative reactions Hence, a natural division or classification of pulmonary tuberculosis is into predominantly productive and predominantly exudative cases The productive cases may be subdivided into three lower groups acinose-productive (azinos-produktive), acinose-nodose (azinos-nodose) and "cirrhotic" cases Among the types of exudative tuberculosis we may distinguish "acinose-exudative' and lobular-exudative" (cheesy) cases Following the defensive reaction processes come the reparative or healing processes The various reparation processes may suffer serious complications owing to the softening of the cheesy masses, from which the ulcerous cavernous type of tuberculosis develops which as soon as it can be demonstrated clinically is with few exceptions, incurable The speaker then discussed the question as to whether any anatomic evidence could be adduced to show that in the evolution of tuberculosis fluctuations in the capacity of the organism to react occur that might be interpreted as due to allergic conditions He stated that as regards this problem he had been led by his own investigations to accept the views of Ranke as essentially correct From the standpoint of allergy we must separate the primary effect in infancy and childhood and the generalized type of tuberculosis in childhood and around the age of puberty from the more localized type of the disease found in adults who are relatively immune Then again, we must distinguish carefully between a primary infection and a reinfection The pressure exerted by inelastic chest walls can only increase the liability to infection, but does not decide the fate of the patient The speaker developed the following final conclusion It is not so much the seat of the primary infection and the reinfections, nor the extent of the processes developing therefrom, that decides the clinical curability of pulmonary tuberculosis but rather the character of the infectious processes—whether they are productive or exudative, proliferative or indurative, whether they run their course with or without softening and formation of cavities Finally, he entered a plea that the term "tuberculosis" be replaced by the old word "phthisis"

THE EXPERIMENTAL BASIS OF TUBERCULOSIS THERAPY

Uhlenhuth referred to Koch, stating that soon after the discovery of the tubercle bacillus he began to search for a

therapeutic means of combating it. The speaker stated that comprehensive experiments that he had undertaken had proved to his own satisfaction that old tuberculin will not effect a cure in guinea-pigs Uhlenhuth then considered Koch's other tuberculins Koch himself maintained that he had brought about immunization in animals by means of various preparations No protocols of the experiments however, seem to be in existence, and other investigators have been unable to substantiate his findings But with man it is quite different, as we find authentic evidence of cures being effected by the use of tuberculins Guinea-pigs and rabbits are not appropriate animals for experimentation on tuberculosis As bovines can scarcely be employed, man himself must serve, as it were, as an experimental animal Toxic processes in man are at least favorably influenced But we have no proof that immunization in man has ever been accomplished The curative effect, therefore, is not based on immunization but, in great part, on focal reaction together with hyperemia Nor is there adequate evidence to show that immunization in animals has been brought about by the use of Deycke-Much partial antigens Furthermore, the speaker takes the attitude that fatty antibodies do not exist, and is therefore compelled to reject the Deycke-Much procedure, as he does not find that it possesses any advantages over the Koch preparations Although up to the present time no conclusive results have been accomplished with heterogenous bacilli (inoculation of man with bovine bacilli and bovines with human bacilli), this is nevertheless an important point and deserves to be investigated further As regards passive immunization, Uhlenhuth stated that he was inclined to take an extremely pessimistic attitude in view of the chronicity of the disease Chemotherapy, unfortunately cannot be said as yet to have contributed anything worth while to the specific treatment of tuberculosis

THE CLINICAL TREATMENT OF TUBERCULOSIS

Dr Gerhardt spoke of the clinical course of tuberculosis as presenting widely different aspects Many types of tuberculosis heal spontaneously without the aid of a physician, others seem doomed to end fatally Besides the extent of the infectious process in the lung, it is important to determine whether the process is progressive, and if so, what the rate of progress is Furthermore, we must endeavor to ascertain the anatomicopathologic character of the process The more frequently we have an opportunity of observing the course of pulmonary tuberculosis when no treatment is given, the more conservative we shall be in our judgment of various methods It is still a matter of controversy as to what constitutes the favorable effect of mountain climate The purity of the air is doubtless an important factor If the treatment in health centers can be continued until the patient is completely cured, there is no doubt that it offers the best conditions for recovery The question arises whether or not the so-called people's health centers, where patients are retained for the short space of three months, exert a worth-while influence Statistics show that they do However, it is not advisable to send advanced cases to such health centers

ROENTGEN IRRADIATION OF PULMONARY TUBERCULOSIS

After a brief historical introduction, de la Camp summed up the results of roentgenologic work and study by saying that roentgen-ray treatment can be regarded only as supplementary to natural curative processes Cicatrization may be stimulated, but we should avoid bringing about a breakdown of the tuberculous tissue in any case, as this would entail all the disadvantages of the rapid creation of a pathologic cavity No universal roentgen-ray dosage for tuberculosis can ever be established, as there are too many factors entering into the case Tubercle bacilli cannot be killed by roentgen irradiation, however, certain indirect effects on even the bacillus have been observed Only cases in which there is a tendency to latency and a cicatrization of the lesions should be considered as amenable to roentgenotherapy

THE OPERATIVE TREATMENT OF PULMONARY TUBERCULOSIS

In the field of surgical treatment, L Brauer stated, more than 1,200 articles have appeared during the last fifteen years, which may be taken as indicative of the interest in the subject For surgical treatment only such cases should be selected as prove rebellious to other forms of treatment. Freund's method of treatment (chondrotomy) seems to have been laid on the shelf The opening up of caverns or cavities still continues to be discussed, and lately Sauerbruch has championed this method following thoracoplasty But caution should still be observed in this field The danger of air embolism is very great in connection with operations on indurated tissue The speaker then took up the various forms of treatment by lung collapse As to whether the incision or the puncture method should be used, there is as yet no common agreement Both have their advantages and disadvantages

PRAGUE

(From Our Regular Correspondent)

June 2, 1921

Medical Officers of Insurance Associations on Strike

The central organization of Czechoslovak physicians declared a strike, May 1, of all physicians acting as medical officers of insurance associations Sickness insurance in Czechoslovakia is highly organized and rest in the hands of workmen's associations These associations represent a strong political factor, as most of the officers of the insurance associations are social democrats Sickness insurance in the country is compulsory, and comprises about 90 per cent. of the population The insured persons derive a medical benefit from the insurance association, consisting of hospital treatment when necessary and free medicines The indemnity for unemployment while sick is paid for not more than a year, and consists of two thirds of the average wage of the insured person An indemnity is paid also to mothers for six weeks before and six weeks after confinement The fees which the physicians receive from the insurance associations are very low in comparison with the minimal fees prescribed by the central organization of physicians The German insurance associations pay their physicians twice as much as the Czech This has been the chief reason for the strike The strike has been in progress for a month, and there is no prospect of an early solution The ministry of public health has not become involved in the difficulty because the whole question of insurance is delegated to the ministry of social welfare The insurance associations have offered the physicians a raise of 40 per cent, but the offer has been refused

New Society of Specialists in Otolaryngology

A new scientific society was founded, May 16, under the leadership of Profs O Kutwirt and J Cisler of the Czech Medical Faculty The aim of the society is to bring together workers who are specialists in otolaryngology, and particularly to coordinate their research Twenty-five members attended the first meeting, which was held in Prague.

The Infant Mortality Rate

Infant mortality rates, which showed a sharp increase in the first year of the war and which remained during the war at the average prewar level, were followed in the year 1919 by a very low rate all over the country It has been difficult to explain this phenomenon Although the general situation has improved enormously, yet it has not attained the prewar conditions A close study of the high infant mortality rate in 1915 and a low rate in 1919 has shown that this phenomenon is due to a statistical fallacy produced by the fluctuating birth

rate A sharply decreasing birth rate in a given year tends to increase the infant mortality rate in the same year and on the other hand, a rapid increase in the birth rate means a depression of the infant mortality rate for the same year The reason for this is, of course, that in computing an infant mortality rate in the usual way we are dealing in part with two different groups of children

PEKING, CHINA

(From Our Regular Correspondent)

April 15, 1921

The Famine in China

The five provinces or states which are principally affected by famine are Chihli, Shansi, Shensi Honan and Shantung which, roughly speaking represent the northeastern quarter of China proper The famine is the result of a severe drought lasting without relief through the spring and summer of 1920 The severest famine has been in those regions along the Yellow River, which flows first south and then east through this territory Three years ago it broke its bounds and, by flooding the land, brought destruction and disaster all along its course In these regions, therefore there was no reserve supply of grain Famine was predicted early last summer, when day after day of burning dryness withered the grain before it had matured The real effects were not manifest, however, until the pinch of hunger drove the people to action The first effect was the emigration from the famine districts The inhabitants went first by hundreds and then by thousands, seeking food and work, some north and others south as chance or hope directed them Many traveled by foot or by cart but great numbers boarded freight trains bound for the big cities Sometimes whole families moved and sometimes men left their families, promising to return Those who had to stay lived on what they had saved from preceding years as long as possible. If this were not enough they consumed their stock. Then they sold their movable property Then they tore down parts of their houses and sold what they could and used the wood for fuel Then, if help did not come, they died Some sold their wives and children to traders coming from the cities It is reported that children often sold for a few coppers, while girls and young women brought as much as $30

At each stage of this downward journey the other people of China, and particularly the foreigners became more and more concerned Here and there organizations were formed which attempted to give local relief and before long there was a multiplicity of organizations with a resultant great waste of energy and money Profiteering and graft were not unknown, and jealousy and suspicion crept into the councils It soon became apparent that, to give efficient relief, it would be necessary to form a central body to direct the whole work In September the International Famine Relief Committee was formed, and after some stormy weeks of organization and some opposition from other organizations already in the field, it emerged an active and efficient body As formed, it represented all interested organizations, including government officials Red Cross representatives, business men Y M C A men and missionaries The committee established itself in Peking, and from this point of vantage took upon itself to view with disinterestedness and proper perspective the whole famine field, to collect money, to procure grain and to distribute it justly and efficiently

SURVEY OF FAMINE DISTRICTS

Accurate surveys had to be made It was at first estimated that 20,000,000 people were threatened with starvation and that it would require a dollar a month to carry a single individual through until next harvest time This would involve the enormous sum of more than a hundred million dollars The committee was at once faced with the impossibility of raising such a fund and the impossibility, therefore, of saving all of the starving people If a hundred million could not be raised, at least the effort must be made to raise as much as possible The relief could expand only as fast as money came in Famine drives were launched in all parts of China and in all parts of the world In China the drives have netted $2,500 000, and $4,000,000 more has been lent by the banks with future taxes as security From other countries, funds have come making available up to the present time only $16 000 000 (Mexican), the equivalent of about $8,000,000 in gold

With such a limitation of funds, definite policies had to be established The question 'Whom shall we save and whom shall we let die?" had to be answered In answer to this, two policies were suggested first, to select the best elements —the young, the rugged, the thrifty and the hard working— and let the old, the weak the shiftless and the lazy die, second, to help only the absolutely destitute, hoping that those not so low might themselves find a way out and live After long discussion the latter policy has prevailed, but with the added stipulation that those who are helped at all must be carried through until harvest

Then came the problem of finding out who the absolutely destitute were After careful revision of censuses, there were found to be more than 10,000,000 who would surely die if help was not given them Even this number could not all be saved Who could choose between them? The decision over life and death in such circumstance is not easily made It would seem self evident that, other things being equal, those best fitted to live should live In some places an attempt was made to follow out this method, but in most places it seemed that only lot could make this final decision Drawing lots has always appealed to the Chinese There is something supernatural about it, something of fate, and they are willing to accept its decision

The body of investigators included students, missionaries, Y M C A and Red Cross men, business men and higher class Christians, virtually all of whom gave their services gratis Before going out they were given preliminary instructions in the art of investigation The method that they have followed is first to obtain from the head man of the village a list of the destitute people of the town Then the homes are visited and the actual living status determined If grain or stock of any kind is found, that house is passed by, but if there is absolutely nothing, the name is left on the list When all have been seen, lots are drawn Those who are lucky are given a grain ticket, which is good for 20 pounds of grain a month until harvest time, which will be the end of June The individual who holds the ticket is thereafter responsible for procuring the grain from the county distributing center

The chief grain is "Kao liang" or "high grain," a kind of broom corn, but there are also millet, wheat and corn The grain is first transmitted to district relief stations on the railroad lines and then carted to the subdistributing centers in each county for subsequent distribution Those who have a little grain mix it with all sorts of vegetable and mineral diluents to give bulk, to satisfy the craving of hunger Grass, dried leaves tree bark, corn cobs thistle leaves, chaff, locust berries ground up soap stone and white clay have all been found in the famine food

DISEASES INCIDENT TO THE FAMINE

Out in the sparsely settled country, it is difficult to get accurate reports, but apparently the deaths from starvation are preceded by a slowly developing emaciation Occasionally, death is preceded by great edema, which is thought to be due to poisoning from the food substitutes There have been no serious epidemics among famine sufferers except in the great refugee camps

As the people fled north and south from the famine areas toward the big cities, they frequently encountered a cold

reception and were not allowed to enter the city Outside of Tientsin, 60,000 of them congregated Many fled to Buddhist temples and many to Protestant and Catholic mission centers Wherever they gathered in quantities, infectious diseases soon appeared Measles, scarlet fever, diphtheria, meningitis and smallpox were all active The lice-borne diseases—especially typhus and relapsing fever—appeared in force

A sanitation subcommittee of the United International Famine Relief Committee was formed to take what measures it could to prevent the spread of these diseases in the camps The limited supply of physicians made this problem overwhelming, and the committee advised immediate dispersion of the camps and a return of the refugees to the land to get ready for the harvests Smallpox spreading from the camp in Tientsin into the family of one of the Chinese officials in that city precipitated the breaking up of that camp, where no medical control was possible Here whole families lived in small holes or cellars dug in the ground and covered by matting The crowding was suffocating and the filth indescribable

SANITATION COMMITTEES

In the smaller refugee centers there has been some control The sanitation committee organized and sent out two sanitation teams consisting of a foreign physician in charge a business manager, two Chinese physicians, six nurses and eleven coolies They set up mat-shed hospitals in the neighborhood of the refugee camps and isolated all of the sick and gave what treatment they could Their chief attack was directed against typhus and relapsing fever A very efficient delouser was devised by Dr J H Ingram of Peking, who is a medical missionary under the American Board of Foreign Missions It cost only $50 to build and is most effective A few of the details will be interesting It is an oblong building 20 feet long 7 feet wide and 6½ feet high, built with a double wall of sun-dried bricks There is a door at each end and two poles inside running lengthwise near the ceiling In a small pit at each end there is a coal stove with bellows at the draft The chimneys pass under the floor, gradually ascending to the opposite side, where they open into the room This effectively heats the floor and roasts the lice as they fall from the garments The clothes are hung loosely on the poles and are put in at one end and removed from the other When the chamber is full, the doors are closed and the bellows are started In seven or eight minutes, the temperature has reached 70 or 80, and within fifteen minutes the clothes are lice free Meanwhile, the individual has had his head shaved and has received a regular old fashioned "Saturday night bath" in a bath house set up next to the delouser More than a hundred can be handled in an hour by this method

All of the refugees of the Peking camp, which was a small one in the southern part of the city, were given this treatment At Shun Teh Fu in southern Chihli there were 12,000 refugees scattered throughout the city, living as best they could and under no control except that of the bread line and soup kitchen All were deloused and sent home with grain tickets These sanitation teams are gradually going from one center to another in an attempt to clean them up The work is progressing slowly because of the limited personnel and there are still many foci of infection in the smaller and more remote refugee camps

It may be of interest to know that the sanitation committee has been financed by an appropriation of $100,000 (Mexican), or $50,000 gold, from the funds raised in the United States The work has been directed by an American physician and a Chinese who took a public health course in the United States

I have to thank Mr Philip A Swartz, the director of religious and social work in the college, and Dr Charles Young of the sanitation committee for the data used in this letter

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Deaths

George Frank Butler ⊕ Winnetka, Ill, Rush Medical College, Chicago, 1889, died from heart disease, June 22, aged 64 Dr Butler was born in Moravia, N Y, in 1857, he was lecturer in pharmacy and materia medica in his alma mater from 1889 to 1892, professor of materia medica, therapeutics, and clinical medicine Northwestern University Woman's Medical School, 1890-1896, professor of the same subjects in the College of Physicians and Surgeons, Chicago, 1892-1906, professor of medicine in the Dearborn Medical College, 1905-1906, professor of internal medicine in the Chicago Post-Graduate Medical School, 1905-1907, and professor and head of the department of therapeutics, Chicago College of Medicine and Surgery 1906 1915 He was for a time consulting physician to the Cook County Hospital He had been director of the Alma Sanatorium later medical director of the Mudlavia Springs Sanatorium, and recently of the North Shore Health Resort in Winnetka He was the author of numerous books, his medical works devoted chiefly to materia medica and therapeutics, and nonmedical books, including fiction, essays and poetry His most recent books were on mental hygiene and included 'The Travail of a Soul," 1914, and "How the Mind Works' 1921

Russel McWhorter Cunningham, Birmingham, Ala, Bellevue Hospital Medical College, New York 1870, formerly a member of both houses of state legislature, delegate to Constitutional Convention, 1906, lieutenant-governor of Alabama, and acting governor one year (1904), at various times president of the Alabama Medical Association, died, June 6, aged 66

Walter Bernard Winchell, Brooklyn, New York Homeopathic Medical College, 1886, member of staff, Cumberland Street Hospital and also Prospect Heights Hospital, Brooklyn member New York State Homeopathic Medical Society, died, from bronchitis June 18, aged 63

⊕ Indicates 'Fellow of the American Medical Association

Lorene Painter, Lincoln, Neb., Boston University School of Medicine, 1917, member of staff, Green Gables Sanatorium Lincoln, was secretary-treasurer of the Nebraska State Woman's Medical League, died, June 17, of acute miliary tuberculosis, aged 31

Walter R Pike, St George Utah University of Vermont College of Medicine Burlington 1887 Medical Department University of the City of New York 1888 first medical superintendent of State Mental Hospital Provo, died, June 10 aged 73

John MacDiarmid ⊕ DeLand, Fla., Southern Medical College, Atlanta 1891, former mayor of DeLand served in Medical Corps U S Army, in the World War, died suddenly on the Atlantic Coast Railroad train May 23 aged 50

John L Durham, Gravsville Ind University of Louisville Medical Department, 1880 member Indiana State Medical Association, served on United States Pension Board during Cleveland's administration, died June 13 aged 66

Wilbur S Watson, Danbury Conn Long Island College Hospital, Brooklyn, 1884, member of the Connecticut State Medical Society, former surgeon general, Connecticut National Guard, died, June 8 aged 69

William W Longacre, Mount Pleasant Mills, Pa., College of Physicians and Surgeons Baltimore 1893 member of the Medical Society of the State of Pennsylvania, died, May 9, from Bright's disease, aged 55

James E Groff ⊕ Doylestown Pa Jefferson Medical College 1880 at one time Bucks County representative of the state department of health and member of the Borough Council, died June 16, aged 65

William Clay Baster, Benton Harbor Mich., Hahnemann Medical College and Hospital of Chicago 1884 died at the Waukesha Sanatarium, Wis., from cerebral hemorrhage, June 11 aged 58

Frederick Marshall Davenport, Scranton, Pa., Jefferson Medical College, 1905, member of Medical Society of the State of Pennsylvania, died at Hahnemann Hospital, May 15 aged 50

John Henry Hartwell ⊕ Philadelphia Medico-Chirurgical College of Philadelphia 1910 died from infection resulting from pricking his finger while operating on a patient, June 21 aged 48

Leonard O Buzzell, Standish, Me Dartmouth Medical College, Hanover, N H, 1882 member of the Maine Medical Association, died, June 6 from injuries sustained in a fall aged 72

James P Latimer, Newark, Ohio, College of Physicians and Surgeons, Baltimore, 1880, member of Ohio State Medical Society, died, June 7, from a complication of diseases aged 68

Joseph H Potts ⊕ Holyoke Mass Dartmouth Medical College Hanover, 1884, specialized in otology, laryngology and rhinology, died, May 16 after a long illness, aged 62

Joseph S Raborg, Baltimore, University of Maryland, Baltimore, 1867 at one time medical superintendent, San Francisco City Hospital, died, June 12, aged 74

William S Grimes ⊕ Wapello Iowa, Rush Medical College 1874, a practitioner of Wapello for nearly fifty years, a Confederate veteran, died June 7, aged 79

Edwin A Weimer, Peoria, Ill., Rush Medical College, 1895, died June 7, in the Elkhart General Hospital, Elkhart, Ind., from pneumonia, aged 50

William Henry Heller, LeMars Iowa, University of Illinois 1902, died at Lake Minnetonka, June 9, from tumor of the brain, aged 48

Archibald A Swinton, Charlevoix Mich., University of Michigan 1898, mayor of Charlevoix, died, May 25, from cerebral hemorrhage

Arthur Bailey Williams, Chicago, College of Physicians and Surgeons, Boston, 1907, died, May 21, from paralysis

Edward H Troy, McAlester, Okla., University of Michigan, 1891, died April 22, from bronchopneumonia, aged 60

Leonard Briggs Oliver ⊕ Chula Vista, Calif., University of Iowa, Iowa City, 1887, died suddenly, June 10, aged 63

Percy Joseph Wiley, Portland Ore., University of Oregon, Portland, 1905, died, May 22, aged 39

W A Orender, Norwood, Mo (license, Missouri, 1883), died, about June 1, aged 74

Charles L Orr, Ada Okla., Louisville Medical College, 1886, died, June 6, aged 60

Thomas Burke, Wayside, Wis., Rush Medical College, 1886, died in June, aged 65

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

OXYL-IODIDE NOT ADMITTED TO N N R

Report of the Council on Pharmacy and Chemistry

Oxyl-Iodide' (Eli Lilly and Co) is said to be the hydroiodid of cinchophen and the claim is made that it exerts the effects of cinchophen and of iodid Because of inquiries which have been received the Council decided to determine the eligibility of 'Oxyl-Iodide" for New and Nonofficial Remedies Dr P J Hanzlik—formerly Associate Professor of Pharmacology at Western Reserve University School of Medicine now Professor of Pharmacology at Leland Stanford Junior University Medical School—who has made a study of the action of salicylates and cinchophen, was asked to report on the therapeutic value and the rationality of 'Oxyl-Iodide" This he consented to do and his report appears below

After considering Doctor Hanzlik's report, the Council declared "Oxyl-Iodide" inadmissible to New and Nonofficial Remedies because it is an irrational combination, marketed under claims that are unproved and consequently unwarranted

W A PUCKNER, Secretary

'Oxyl-iodide," marketed by Eli Lilly & Co, is claimed to be the hydroiodid of phenylcinchoninic acid, containing 33 per cent of iodin and 67 per cent of phenylcinchoninic acid (cinchophen) Its solubility resembles that of cinchophen, being low in water and acid mediums, and higher in the presence of alkalis Whether "oxyl-iodide" is decomposed into its constituents in the presence of alkalis does not appear to have been determined However, if this were the case, the intestine after administration of 'oxyl-iodide," would contain cinchophen and sodium iodid in the same forms as if these agents were administered individually so that nothing would be gained by administering "oxyl-iodide" Being, like cinchophen practically insoluble in acid mediums, 'oxyl-iodide" would have no advantage over the latter so far as gastric irritation is concerned

DOSAGE

The dosage advised is from one to three tablets containing 3 grains (0.2 gm) each of "oxyl-iodide" The total dosage would depend on the condition to be treated In rheumatic fever which requires a full therapeutic or so called, "toxic" dose of cinchophen, about 12 to 13 gm would be administered intensively Since each tablet of "oxyl-iodide contains 0 13 gm of cinchophen the total number of tablets of "oxyl-iodide" required would be 100, or two and one-half bottles of forty tablets each At the same time the patient would receive 6 6 gm of iodin (as iodid) This might be distinctly objectionable because of the production of the disagreeable symptoms of iodism in some persons, and indicates that the fixed proportion of the iodin constituent would be objectionable

Even a smaller dosage, such as 5 gm of cinchophen, which gives partial relief in rheumatism and similar conditions, would still require a patient to take a full bottle, or forty tablets of "oxyl-iodide," and at the same time about 2 7 gm of iodin would have to be ingested

Furthermore, rheumatic fever, the arthritides, gout and related conditions in which cinchophen is indicated do not require iodid Therefore, "oxyl-iodide" would not be the remedy of choice in these conditions, and its use would be irrational and illogical

ACTIONS

No data on the pharmacologic actions of "oxyl-iodide" are presented in the manufacturer s literature Presumably, the compound would exhibit the actions of its individual components, i e cinchophen and iodin (as iodid), though probably less efficiently, owing to its low solubility This is also indicated by the following statements of the manufacturer

reception and were not allowed to enter the city Outside of Tientsin, 60,000 of them congregated Many fled to Buddhist temples and many to Protestant and Catholic mission centers Wherever they gathered in quantities, infectious diseases soon appeared. Measles, scarlet fever, diphtheria, meningitis and smallpox were all active The lice-borne diseases—especially typhus and relapsing fever—appeared in force

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T A ESTREM to Miss Violet Toms, both of Hibbing, Minn, about June 7

Deaths

George Frank Butler ⊕ Winnetka, Ill, Rush Medical College, Chicago, 1889, died from heart disease June 22, aged 64 Dr Butler was born in Moravia, N Y, in 1857, he was lecturer in pharmacy and materia medica in his alma mater from 1889 to 1892, professor of materia medica, therapeutics, and clinical medicine, Northwestern University Woman's Medical School, 1890-1896, professor of the same subjects in the College of Physicians and Surgeons, Chicago, 1892-1906, professor of medicine in the Dearborn Medical College, 1905-1906, professor of internal medicine in the Chicago Post-Graduate Medical School, 1905-1907, and professor and head of the department of therapeutics, Chicago College of Medicine and Surgery, 1906-1915 He was for a time consulting physician to the Cook County Hospital He had been director of the Alma Sanatorium, later medical director of the Mudlavia Springs Sanatorium, and recently of the North Shore Health Resort in Winnetka He was the author of numerous books, his medical works devoted chiefly to materia medica and therapeutics, and nonmedical books, including fiction, essays and poetry His most recent books were on mental hygiene and included "The Travail of a Soul," 1914, and "How the Mind Works" 1921

Russel McWhorter Cunningham, Birmingham Ala, Bellevue Hospital Medical College, New York, 1870, formerly a member of both houses of state legislature, delegate to Constitutional Convention 1906, lieutenant-governor of Alabama, and acting governor one year (1904), at various times, president of the Alabama Medical Association, died, June 6, aged 66

Walter Bernard Winchell, Brooklyn, New York Homeopathic Medical College, 1886, member of staff, Cumberland Street Hospital and also Prospect Heights Hospital, Brooklyn member New York State Homeopathic Medical Society, died, from bronchitis, June 18, aged 63

⊕ Indicates Fellow of the American Medical Association

urine passed So far as my experience goes in treating cases of bilharziasis in South Africa there would seem to be little doubt that the first effect of the injections of antimony is on the eggs which rapidly show signs of degeneration until they completely disappear from the urine and that should living eggs reappear in the urine without the possibility of fresh infection the adult parasites have never been entirely eradicated from the system

As the infection as commonly encountered in South Africa would appear to be less severe than is common in other parts of the continent a total dose of from 12 to 15 grains of antimony and potassium tartrate is generally sufficient one to administer to any patient

Toward the expense of this investigation a grant has recently been received from the British Medical Association and the efficacy of various preparations of antimony and emetin is being investigated as to their permanent effect on the bilharzia and allied parasites but there is no doubt that the tartar emetic treatment in a large number of patients has materially lessened the number of those infected snails

F G Cawston, M D (Cantab)
Durban Union of South Africa

"REPORT OF OHIO COMMITTEE ON ANESTHESIA"

To the Editor—You likely would not have published in the June 18 issue of THE JOURNAL the condensation of the report of the Ohio Committee on Anesthesia from the April 1921 *Ohio State Medical Journal*, had you carefully read in the June number of our state journal the report of the last annual meeting of the Ohio State Medical Association You then would have noticed that by unanimous vote of our House of Delegates the report of the Ohio Committee on Anesthesia was altogether discredited by the adoption of the following resolution presented by the Reference Committee on Reports of Standing Committees

The committee does not concur in partial report of the Special Committee on Anesthesia Survey as published in April 1921 Journal

The report of the Ohio Committee on Anesthesia, as it appears in THE JOURNAL is entirely misleading to all your readers except those in Ohio Actually it was not concerning an Ohio survey but a national survey, evidently confined solely to the expression of the views of proponents of nurse anesthesia from Michigan to Texas and from New York to California In the forty-one statements by surgeons printed in the April (*Ohio State Medical Journal*) report of the Committee on Anesthesia, only four are by Ohio surgeons no one of whom is probably much known outside his home town. Among the sixteen statements of hospital superintendents, "printed in the same report no name can be found of a superintendent of an Ohio hospital This 'report" leads your readers to infer that Ohio physicians generally oppose medical anesthesia, while as a matter of fact, by overwhelming vote the last meeting of the Ohio State Medical Association went on record for the prompt repeal of the state law permitting nurses to administer anesthetics Last month the Ohio State Medical Association, the Ohio State Eclectic Society, and the Ohio State Homeopathic Society, in their regular annual sessions, with unanimity of opinion, by resolutions endorsed medical anesthesia and opposed nursing anesthesia Should this matter be taken up in a similar way by the medical associations of all other states, all would probably endorse medical, as opposed to nursing anesthesia The attitude of some surgeons and of some surgical associations toward the vital subject of anesthesia is a disgrace to them both individually and collectively But it is my desire merely to place before your readers the facts of the recent history of Ohio state medical societies on this question—not attempt to foretell what other states may do

GAYLOR JENNINGS M D, West Milton, Ohio
Chairman Reference Committee on Standing Committee Reports, Ohio State Medical Association, 1921

"SMOKING VERSUS CHEWING"

To the Editor—In THE JOURNAL June 4, 1921, p 1579, an editorial comment reviews an article by us on the output of workers grouped according to habits (*J Indust Hyg* 3 1 [May] 1921) The statement is made in concluding the comment that unfortunately for the interpretation of the results of their study the authors of the paper under consideration do not take into account the ages of their light and heavy smokers and chewers or other factors that might be of great significance This statement however, is not entirely true, as on page 8 of our paper we state that "a study of the correlation of age and output gave negative results, as did also a study of the correlation of overweight and underweight and output" With the extremely low correlation ($r = 0.02$) between age and output it is impossible that age is a factor affecting the differences of output of the various habit groups The overweight or underweight of the men based on the Provident Life and Trust Company tonometric table was employed as a measure of the general condition and health of the men However, with the extremely low correlation ($r = 0.06$) between the conditions of overweight or underweights and output, these measures too could not be of significance in the matter

We have however gone over our data and find that the average ages of the men in the habit groups do not vary in such manner as to account for the differences in output The actual average age for the groups in question are as follows

Habit group	Output Rate	Average Age
Heavy smokers who do not chew	14 24	39 3
Heavy smokers who do not chew	14 33	35 0
Light smokers who do not chew	13 88	33 7
Chewers	13 59	38 5
All habit groups	13 93	36 0

In conclusion we wish again to emphasize the point that the strictly dependable conclusion from a statistical point of view is the decreased output rate of chewers

J P BAUMBERGER,
IDNA E PERRY,
L G MARTIN
Stanford University, Calif

Queries and Minor Notes

Answers to queries and queries on postal cards will not be published unless the writer's name and address be given, but the name will be omitted on request

HEISKELL'S OINTMENT—NITRATE IN OSTEOMYELITIS

To the Editor—1 Have you the approximate formula of Heiskell's Ointment 2 Has commercial nitrate fertilizer been used as a local application in tuberculous bone affections?

R C FINLAY M D Greenville Miss

ANSWER—1 According to 'The Composition of Certain Patent and Proprietary Medicines by J P Street, Heiskell's Letter Ointment is cerate of lead subacetate" In making this statement Street quotes Oleson (1903) through the *Western Druggist* We have no information as to its quantitative composition

2 We are not aware of "commercial nitrate fertilizer" as such being used in the treatment of bone affections A preliminary report has been published on the use of potassium nitrate plus aluminum nitrate in the treatment of osteomyelitis (Queries and Minor Notes, THE JOURNAL April 30, 1921, p 1265)

"The analgesic action of 'oxyl-iodide' is gradual A word of caution is necessary to those who may expect immediate relief from pain" Therefore, why use "oxyl-iodide" in place of more dependable analgesics, such as salicylate or cinchophen The following statements appear far-fetched "There is a stimulation of the endocrines which is perhaps more marked in the thyroid gland, although it is probably shared by the pituitary and other glands which function in a chain-like control There is stimulation of cells with increased flow of secretion, visibly demonstrated by the nasal mucous membrane after 'oxyl-iodide' has been taken for some time The general action on mucous membranes favors elimination of toxins and waste products"

It is probable that "oxyl-iodide" acts as a uric acid eliminant, though there is no reason to suppose that it is more effective than cinchophen alone No data are given for this in the manufacturer's literature

USES

Successful use of "oxyl-iodide" is claimed in brachial and sciatic neuritis, lumbago, muscular rheumatism, arthritis deformans, chronic arthritis (' in some instances were apparently cured"), subacute bronchitis, circumflex neuritis, traumatic orchitis, eczema and rheumatism However, a careful reading of the protocols of seven cases, representing these conditions, gives an unfavorable impression as to the real contribution to the recovery by, or value received from, "oxyl-iodide" Summarized, the opinions as quoted by the manufacturers in support of their claims for "oxyl-iodide" are briefly as follows

Case 1 'Of course, the case is not complete yet, but I am looking for continued betterment"

Case 2 'For two weeks past her improvement has been marvelous"

Case 3 "The joints are still enlarged and we do not hope to clear them entirely "

Case 4 Undoubtedly, removal of the kidney had much to do with improvement"

Case 5 'I think I have gotten very good results"

Case 6 "Some apparent benefit"

Case 7 'She is practically free from pain, and the muscle and joint stiffness is now slight"

These inconclusive opinions certainly do not agree with the favorable impression which other portions of the manufacturer's literature create If the factor of natural recovery in the conditions represented by these seven cases is given due weight little if anything, is left to the credit of 'oxyl-iodide" Such clinical evidence as is supplied by the manufacturer indicates that the therapeutic efficiency of "oxyl-iodide" is doubtful, and not an improvement over either cinchophen or iodid

IODISM

Iodism cannot be avoided by the use of "oxyl-iodide," for the manufacturer's literature states that "the dosage of 'oxyl-iodide' may be pushed to iodism as manifested by skin symptoms To avoid iodism there should be an occasional interruption of treatment" "Oxyl-iodide," therefore, has no advantage over ordinary sodium iodid to avoid iodism Usually, the conditions which require cinchophen do not require the simultaneous administration of iodids, and vice versa If administration of iodid and cinchophen together should be indicated or desirable, these can be given separately with the added advantage that the iodid can be easily reduced or withdrawn in case iodism supervenes, and the cinchophen could be continued if necessary Since conditions do not arise frequently enough to warrant the use of iodid and cinchophen together, the existence of such a product as "oxyl-iodide" is unwarranted

Finally, the manufacturer himself recognizes that phenylcinchoninic acid (cinchophen) can take the place of "oxyl-iodide" Under "dosage," the circular states "A few patients may be idiosyncratic to the iodides and find they cannot take 'oxyl-iodide' For the latter chloroxyl, the hydrochloride of phenylcinchoninic acid, is recommended" The action of the hydrochlorid of phenylcinchoninic acid does not differ of course, from that of cinchophen The difficulties of assigning a clear-cut, definite, therapeutic role to "oxyl-iodide" in order to justify its existence, alongside well-known and tried remedies are self-evident

CONCLUSION

"Oxyl-iodide" is pharmacologically and therapeutically an illogical, irrational and unjustified substitute for cinchophen and iodids The conditions which require the administration of cinchophen do not as a rule require the administration of iodid and vice versa If it is desirable to secure the effects of iodid and cinchophen together, these can be more conveniently and advantageously administered as separate agents, permitting in that way a better control of their actions This cannot be accomplished with "oxyl-iodide," in which the proportion of iodid and cinchophen are fixed Symptoms of iodism cannot be avoided by the administration of "oxyl-iodide" The objective evidences for its actions and uses are totally lacking, and the clinical opinions concerning its therapeutic benefits in different disease conditions are inconclusive and hedging, and, if anything, contradictory to the favorable impressions which the language of the advertising matter is likely to create

Correspondence

BILHARZIA DISEASE IN NATAL ITS PREVALENCE AND TREATMENT

To the Editor —My attention has been drawn to some statements in THE JOURNAL in regard to the prevalence of fluke infestation in South Africa which require an explanation It is only in very limited areas that fluke disease among cattle and bilharzia infection among children can be regarded as a serious economic problem

At one time bilharzia disease was a common complaint among schoolchildren in Natal, and insurance companies were continually confronted with the problem of cases in which the infection had persisted after boys had left school The prevalence of the disease at Pietermaritzburg was largely due to bathing in a river which was heavily infested with *Physopsis africana*, the common fresh-water snail which acts as the intermediary host, while residents at Durban who suffered from the disease invariably associated it with bathing in the suburban pools and rivers In examining *Physopsis africana* recently for the preparation of a suitable antigen test for the bilharzia parasite, I found eighteen out of twenty heavily infected with this human parasite, though the introduction of domesticated duck has materially reduced the number of fresh-water snails in the suburbs from which I obtained the snails

When it became widely known how boys contracted the disease, river bathing became much less common, and today the infection is very much less frequently encountered in general practice, while only occasionally are cases admitted into the provincial hospitals

In 1919, Dr A B M Thomsen, the medical inspector of schools in Natal, drew my attention to the encouraging results Dr J B Christopherson was obtaining from the use of tartar emetic in Khartum, and I commenced to give this treatment a trial in South Africa Judging from the results I have obtained in a series of 100 cases whose condition I have followed for several months after the treatment was completed I have no hesitation in saying that the disease can be entirely eradicated in the vast majority of cases by fresh and frequent injections of tartar emetic in solution given over a period of twenty-eight days Where such doses of from ¼ grain to 1¾ grains of tartar emetic have been given intravenously on alternate days for such a period, I have never seen any return of symptoms or been able to detect any living ova in the

urine passed So far as my experience goes in treating cases of bilharzia disease in South Africa, there would seem to be little doubt that the first effect of the injections of antimony is on the eggs, which rapidly show signs of degeneration until they completely disappear from the urine and that, should living eggs reappear in the urine without the possibility of fresh infection, the adult parasites have never been entirely eradicated from the system

As the infection as commonly encountered in South Africa would appear to be less severe than is common in other parts of the continent a total dose of from 12 to 15 grams of antimony and potassium tartrate is generally a sufficient one to administer to any patient

Toward the expense of this investigation a grant has recently been received from the British Medical Association, and the efficacy of various preparations of antimony and emetin is being investigated as to their permanent effect on the bilharzia and allied parasites, but there is no doubt that the tartar emetic treatment in a large number of patients has materially lessened the number of fluke infested snails

F G CAWSTON, M D (CANTAB)
Durban, Union of South Africa

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We have however, gone over our data and find that the average ages of the men in the habit groups do not vary in such a manner as to account for the differences in output The output and average age for the groups in question are given below

Habit group	Output Rate	Average Age
Nonusers of tobacco	14 24	39 3
Heavy smokers who do not chew	14 33	35 0
Light smokers who do not chew	13 88	33 7
Chewers	13 59	38 5
All habit groups	13.99	36 0

In conclusion, we wish again to emphasize the point that the only strictly dependable conclusion, from a statistical point of view, is the decreased output rate of chewers

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2 We are not aware of 'commercial nitrate fertilizer" as such being used in the treatment of bone affections A preliminary report has been published on the use of potassium nitrate plus aluminum nitrate in the treatment of osteomyelitis (Queries and Minor Notes, THE JOURNAL April 30 1921 p 1265)

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA Montgomery, July 12 Chairman Dr Samuel W Welch Montgomery

ARIZONA Phoenix, July 5 6 Sec, Dr Ancil Martin 207 Goodrich Bldg Phoenix

COLORADO Denver July 5 Sec, Dr David A Strickler 612 Empire Bldg Denver

CONNECTICUT Hartford July 12 13 Sec Regular Board, Dr Robert L Rowley 79 Elm St Hartford

CONNECTICUT New Haven July 12 Sec Eclectic Board Dr James E Hair 730 State St Bridgeport Sec, Homeo Bd Dr Edwin C M Hall 82 Grand Ave New Haven

DISTRICT OF COLUMBIA Washington July 12 14 Sec Dr Edgar P Copeland 1315 Rhode Island Ave Washington D C

INDIANA Indianapolis July 12 14 Sec, Dr Wm T Gott 84 State House Indianapolis

MAINE Augusta July 5 6 Sec, Dr Frank W Searle 775 Congress St Portland

MARYLAND Baltimore July 19 Sec Regular Board Dr J McP Scott 141 W Washington St Hagerstown

MASSACHUSETTS Boston July 12 14 Sec, Dr Walter P Bowers, Room 144 State House Boston

NEW MEXICO Santa Fe July 11 12 Sec, Dr R E McBride Las Cruces

NORTH DAKOTA Grand Forks, July 5 8 Sec, Dr G M Williamson, Grand Forks

OKLAHOMA Oklahoma City July 12 13 Dr J M Byrum Shawnee

OREGON Portland July 5 7 Sec, Dr Urling C Coe 1208 Stevens Bldg Portland

PENNSYLVANIA Philadelphia and Pittsburgh July 5 9 Sec, Mr Thomas E Finnegan State Capitol Harrisburg

RHODE ISLAND Providence July 7 8 Dr Byron U Richards State House Providence

SOUTH DAKOTA Deadwood July 19 20 Director of Medical Licensure Dr H R Kenaston Bonesteel

UTAH Salt Lake City July 6 Sec Mr J T Hammond Salt Lake City

WASHINGTON Olympia, July 12 Commissioner of Licensure Mr Wm Melville Olympia

WEST VIRGINIA Charleston July 12 State Commissioner of Health Dr L T Vinson Masonic Bldg Charleston

Iowa January Examination

Dr Guilford H Sumner, secretary, Iowa State Board of Medical Examiners, reports the written examination held at Des Moines, Jan 5-7 1921 The examination covered 8 subjects and included 100 questions An average of 75 per cent was required to pass Three candidates were examined, all of whom passed Six candidates were licensed by reciprocity The following colleges were represented

College	PASSED	Year Grad	Per Cent
Medical School of Harvard University		(1919)	89 9
John A Creighton Medical College		(1920)	85 5
Ohio State University College of Homeopathic Med		(1920)	86 6

College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Chicago College of Medicine and Surgery		(1917)	New Mexico
Rush Medical College		(1919)	Illinois
University of Maryland		(1919)	Maryland
University of Minnesota Medical School		(1920)	Minnesota
University Medical College of Kansas City		(1908)	Kansas
University of Nebraska College of Medicine		(1919)	Nebraska

Illinois February and March Examination

Mr W H H Miller, director, Illinois State Department of Registration and Education, reports the written and practical examination held at Chicago Feb 28-March 2, 1921 The examination covered 10 subjects and included 100 questions An average of 75 per cent was required to pass Of the 92 candidates examined, 81 passed and 11 failed Thirteen candidates were licensed by reciprocity and one candidate was licensed on government credentials The following colleges were represented

College	PASSED	Year Grad	Number Licensed
College of Physicians and Surgeons Los Angeles		(1919)	1
Howard University School of Medicine		(1907)	1
Bennett Medical College		(1915)	1
Chicago Medical School	(1920 2)	(1921 2)	4
Chicago College of Medicine and Surgery		(1917)	1
Loyola University School of Medicine		(1921)*	3
Northwestern University Medical School	(1920)	(1921 4)†	5
Rush Medical College		(1921)‡	55
University of Minnesota Medical School		(1921)	1
New York Homeo Med Coll and Flower Hospital		(1917)	1
Leonard Medical School		(1906)	1
Ohio State University College of Medicine		(1920)	1
Meharry Medical College	(1910), (1913 2) (1916),	(1920)	5
Vanderbilt University		(1917)	1

	FAILED		
American College of Medicine and Surgery		(1905)	1
Chicago Hospital College of Medicine		(1915)	1
Chicago Medical School		(1921)	1
Meharry Medical College	(1908), (1912), (1914) (1916) (1917), (1919)	(1915),	7
Royal University of Naples		(1915)§	1

College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Rush Medical College		(1914)	Minnesota
University of Louisville		(1914)	Kentucky
University of Michigan Medical School		(1920)	Michigan
Columbia University		(1910)	New York
Jefferson Medical College of Philadelphia		(1919)	New York
University of Pennsylvania	(1912)	(1918)	Penna
University of Pittsburgh		(1912)	Penna
Meharry Medical College	(1909) Texas (1910),	(1919)	Kentucky
McGill University		(1908)	New York
Western University Faculty of Medicine		(1910)	Canada

College	ENDORSEMENT OF CREDENTIALS	Year Grad	Endorsement with
Cooper Medical College		(1912)	U S Navy

* One candidate received temporary license pending completion of his hospital internship

† Three candidates received temporary licenses pending completion of their hospital internships

‡ Received temporary licenses pending completion of their hospital internships

§ Graduation not verified

Wisconsin January Examination

Dr J M Dodd, secretary, Wisconsin State Board of Medical Examiners, reports the oral written and practical examination held at Madison, Jan 11-13 1921 The examination covered 18 subjects and included 100 questions An average of 75 per cent was required to pass Of the 13 candidates examined 11 passed and 2 failed Nine candidates were licensed by reciprocity, and 4 candidates were licensed on government credentials The following colleges were represented

College	PASSED	Year Grad	Per Cent
Northwestern University Medical School		(1920)*	78
Rush Medical College	(1917) 85 (1919) 81	(1920)*	83
University of Illinois College of Medicine		(1920)	80
Johns Hopkins University Medical Department		(1920)	89
Medical School of Harvard University		(1919)	89
St Louis University School of Medicine		(1920)	83
University and Bellevue Hospital Medical College		(1920)	88
Osteopaths			80 †

	FAILED		
Chicago College of Medicine and Surgery		(1914)	69
Loyola University School of Medicine		(1917)	67

College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Hahnemann Med Coll and Hosp of Chicago	(1918)	(1919)	Illinois
Loyola University School of Medicine		(1918)	Illinois
Northwestern University Medical School		(1901)	Illinois
University of Illinois College of Medicine		(1919)	Illinois
Indiana University School of Medicine		(1915)	Indiana
State University of Iowa College of Medicine		(1904)	Illinois
Saginaw Valley Medical College		(1899)	Michigan
Meharry Medical College		(1918)	Tennessee

College	ENDORSEMENT OF CREDENTIALS	Year Grad	Endorsement with
Northwestern University Medical School		(1913)	U S Army
Rush Medical College	(1914) U S Army	(1917)	U S Navy
University of Minnesota Medical School		(1917)	U S Navy

* These candidates have finished the medical course and will obtain the M D degree after they have completed a year's internship in a hospital

† No grade given

Porto Rico April Examination

Dr M Quevedo Baez, secretary, Porto Rico Board of Medical Examiners reports the written and practical examination held at San Juan, April 5, 1921 The examination covered 12 subjects and included 120 questions An average of 75 per cent was required to pass Of the six candidates examined, 5 passed and 1 failed The following colleges were represented

College	PASSED	Year Grad	Per Cent
Loyola University School of Medicine		(1917)	78 7
University of Maryland		(1920)	78
Boston University School of Medicine		(1916)	81 3
Jefferson Medical College of Philadelphia		(1916)	80
University of Pennsylvania		(1920)	78 5

	FAILED		
Chicago College of Medicine and Surgery		(1916)	55 7

Book Notices

DIE KINDERTUBERKULOSE IHRE ERKENNUNG UND BEHANDLUNG Ein Taschenbuch fur praktische Aerzte By Prof Hans Much Paper Price 4 80 marks Pp 35 Leipzig Curt Kabitzsch 1920

TUBERCULOSIS OF CHILDREN ITS DIAGNOSIS AND TREATMENT By Professor Dr Hans Much Director of the Department for the Science of Immunity University of Hamburg Germany Translated by Dr Max Kothschild Medical Director of the California Sanatorium for the Treatment of Tuberculosis San Francisco and Belmont California Cloth Price $2 50 Pp 156 New York The Macmillan Company, 1921

This monograph concerns principally the diagnosis and treatment of tuberculosis in childhood Tuberculosis of the adult, Much says, generally follows infection acquired during childhood and consequently any attempt at its eradication must begin with thorough and effective treatment at an early age He points out that at this early period the disease is easily cured and a resulting immunity insures protection for the remainder of that individual's life Tuberculosis of the bronchial glands, he states, is the most frequent form that is encountered in childhood In describing the symptomatology, he ascribes importance to exhaustion following moderate exertion, to emaciation to digestive disturbances to inclination to catarrh, to dyspnea and to pallor He thinks that a child with tuberculosis undergoes a mental strain, and becomes dull, refractory and ill-tempered Investigation of the previous history of tuberculous patients lead him to conclude that measles, whooping cough and influenza are the diseases most likely to lower the patient's resistance to subsequent infection He finds that in some children cough is absent and he attaches importance to his belief that the absence of cough is never proof of the absence of tuberculosis of the bronchial glands The cough may be similar in character to pertussis, and again a peculiar metallic sound is present which he assumes is due to stenosis of the bronchial tubes from pressure by the enlarged glands Breathing is sometimes difficult, and not infrequently produces a rattling sound during the expirium This he believes is produced by pressure on the trachea or bronchi He considers D'Espine's sign of value, secondary in importance only to the roentgen-ray examination For the diagnosis of enlarged bronchial glands he thinks our most valuable aid in diagnosis is a thorough roentgen-ray examination He contrasts the relative value of the fluoroscopic examination with roentgenography, and concludes that fluoroscopic examination is not in itself sufficient Even when the roentgenogram is good and a careful study of it has been made he admits that the differentiation of the normal hilum shadow from that of a tuberculous one is sometimes difficult Influenza with bronchopneumonic infiltrations may cause considerable difficulty in differentiation, though repeated roentgen-ray examinations may reveal progressive absorption of the bronchopneumonic foci Emphasis is laid on the importance of the tuberculin test in differentiating tuberculosis from other respiratory bronchial gland infections

There can be no cure without immunity, the author believes, the progress in treatment depends on maintenance of this factor Tuberculosis of the bronchial glands may be treated by the use of the roentgen ray, but the danger of reducing the anti-infectious powers of the body by too much roentgenization is not emphasized

Cultures are isolated and treated so that the acid-fastness of the bacilli disappears, and eventually a substance is obtained which is referred to as M T B From this substance, by the process of filtration three partial antigens are obtained, which are designated as M T B R In the process of filtering, M T B, a water-soluble element containing the toxin of the tubercle bacillus is obtained This represents the pure tuberculin, and is designated L The water insoluble residuum is called M T B R By treating the residuum with alcohol and ether the three partial antigens are obtained Continuing his description of the three partial antigens, he says that part one contains the fat acid lipoids which are soluble in alcohol, and he designates these as F, the second part contains the neutral fats high molecular substances soluble in ether, which are called M, the third constituent of this antigen group, which is entirely insoluble, is derived from the residuum and belongs to the group of nucleoproteins This is designated as A These partial antigens are injected in very minute doses, and the author claims they are of special value in the treatment of tuberculous bronchial glands Of these partigens, only M T B R and the special antigens A, Γ and M are considered in the treatment

The ideas advanced by Professor Much may be interesting but the conclusions are far from convincing and the therapeutic directions remind one of manufacturers' "literature In the words of the translator's preface, the assertions of the value of partial antigens or partigens (what a word!) are most emphatic, and it is well to note that as yet nothing but assertions are brought forward in favor of their alleged value Dogmatism with a touch of arrogance is the prevailing note It is quite evident that the efficacy of the treatment with partigens requires further clinical tests The evidence thus far submitted is not sufficient to warrant acceptance

The translation reads smoothly enough That "tubercular" is used in the first ninety pages and "tuberculous" in the other sixty six arouses curiosity There is complete lawlessness, however, in the way roentgen ray and x ray, with or without one or two capitals, is used

SURGICAL THERAPEUTICS AND OPERATIVE TECHNIC By E Doyen English Edition Prepared by the Author in Collaboration with H Spencer Browne M B Eleve de l Institut Pasteur In Three Volumes Cloth Price $35 New York William Wood and Company 1920

In reviewing this work it must be remembered that Doyen is dead The material was ready for publication at least five years ago—about the time of Doyen's death, hence there was no opportunity given him to make revisions which would bring the subject matter up to date, and furthermore, only Doyen's work opinions and beliefs are set forth In short, the work is a professional autobiography published posthumously Under these circumstances, any criticism that could be made of what is said or disagreement with the author's views, would hardly be in good taste Doyen's genius was known and acknowledged, although his views were not always accepted This work is a reflection of his surgical views and practice The first volume—which appeared in 1917—contains much introductory matter on the state of surgical practice at the beginning of the twentieth century on surgical technic and on the duties and rights of the surgeon General surgical technic, including a description of Doyen's "surgical home," of his instruments and apparatus numbering several hundreds, as he was a mechanical genius and devised one or more instruments for each and every step in surgical technic, and the care of the patient before during and after operation are subjects discussed at considerable length Surgery of blood vessels and operations on the head are begun in this volume The second and third volumes were published in 1920 having been translated from the original after the conclusion of the war Volume II continues and concludes the operations on the head, neck, thorax and extremities Volume III takes up the surgery of the abdomen including in this discussion a summary of Doyen's researches into the physiology of the stomach and gastric digestion Operations on the female generative organs and the index conclude this volume The text is freely illustrated throughout by well made pictures—about a thousand to each volume Every instrument every procedure and each step in the more essential and important operations is illustrated, either by a photograph or by a drawing

A TEXT BOOK OF PHYSIOLOGY FOR STUDENTS AND PRACTITIONERS OF MEDICINE By Russell Burton Opitz S M M D Ph D Associate Professor of Physiology Columbia University Cloth Price $7 50 net Pp 1182 with 538 illustrations Philadelphia W B Saunders Company 1920

Burton-Opitz has definitely designed this book from the point of view of the physician, and has correspondingly emphasized the mammalian and human aspects of physiology at the expense of comparative physiology This omission has been largely compensated for by the first section of the book which considers physiology in a much broader manner One of the strongest features of the book is its large number of illustrations and diagrams especially of apparatus and the less easily understood subjects as the clotting of blood. Much

of the material of the text is also gathered in outline form, making the book more available for ready reference The practitioner, especially, will appreciate the brief review of the physical, chemical and histologic principles which precedes each physiologic discussion Considerable emphasis is laid on methods of measurement, possibly too much when it is considered that the older ones are usually inferior to the more recent. Burton-Opitz tends to be somewhat didactic in his treatment of theories often failing to distinguish between facts and their interpretations, or giving but one theory as accepted and not mentioning other equally tenable theories As an instance in point exophthalmic goiter is treated as a hyperthyroidism, with no mention of the possibility of a toxic secretion Not all the most recent work has been incorporated in the text For instance, we were unable to find any mention of vasomotor control of the capillaries, and the sections on internal secretions (thirty-four pages) and immunity (eight pages) seem rather slighted as compared with the physiology of muscle (fifty-seven pages), especially as this book is for medical men There are the usual first edition typographic errors, and pages 79 and 83 are transposed, but, on the whole, the book is well gotten up, the material clearly presented, and the whole a welcome addition to the literature on physiology

DODERLEIN KRONIG OPERATIVE GYNAKOLOGIE Bearbeitet von Dr med et Dr art obs h c Albert Doderlein Direktor der Universitats Frauenklinik Munchen Fourth edition Cloth Price, 400 marks Pp 1028 with 470 illustrations Leipsic George Thieme 1921

The third edition of this book appeared in 1912 The fourth edition is prefaced by a statement from Doderlein which is virtually a eulogy of his collaborator, Kronig, who died not long ago Doderlein points out that operative gynecology has advanced greatly in many fields, and invites comparison of the present volume with the third edition Numerous additions have been made to the text as evidenced by increase in number of pages and pictures Literary references are frequent to articles published during the intervening years, some of the references as late as 1920 Of course there is little consideration given to American or British work, since this literature was not available to German authors A special chapter on Anesthesia," has been prepared by Dr Zweifel, assistant to Doderlein The classical operation drawing the round ligaments through the broad ligaments for suspending the uterus, is credited to Baldy As has been the case with previous editions of this books, it is printed entirely on the finest coated paper, and there are 455 illustrations most of which are in colors Of the American gynecologists mentioned, according to the index, Baldy occurs three times, Cullen, seven times, Dudley once, Kelly twenty-four times, Kosmak, once, Goldspohn once, Marion Sims, eight times, Martin, once, Mayo once and Williams, three times Since the appearance of the first edition in 1905 this book has been considered among the leading textbooks of its subject

DIE SCHLAFSTORUNGEN UND IHRE BEHANDLUNG Von Dr L E Bregman Primararzt am Stadtischen Krankenhaus Czyste Warschau Paper Price 12 mark Pp 136 Berlin S Karger 1920

This unpretentious little book, with paper cover, printed on poor paper and poorly bound, was written in Polish in 1918, but on account of unsurmountable difficulties in the printing situation it had to be translated into German and wait two years for publication The author rightly points out that, as one third of our life is spent in sleeping, the disorders of sleep are worthy of serious consideration The first two chapters deal with the causes and types of insomnia, the third with disturbances of sleep in childhood and youth, such as pavor nocturnus, sleep walking, and enuresis nocturna, the fourth with morbid drowsiness and narcolepsy, the remaining four chapters with treatment, including hydrotherapy, mechanotherapy, psychotherapy, and the mode of action, proper selection and administration of hypnotic drugs In his psychotherapy the author recommends only the more conservative and simple methods He denounces psychoanalysis and warns against deep hypnosis, though he finds light hypnosis useful at times The literature is extensively quoted, and altogether the little book will be found most useful to those interested in the subject

Medicolegal

Legitimate Use of Bones by Physicians as Witnesses

(People v Lipsczinska (Mich) 180 N W R 617)

The Supreme Court of Michigan says that in this homicide case certain bones that had been found were brought into court and were received in evidence without objection After they were received in evidence, physicians, over the objection of the defendant's counsel, assembled the bones The court does not think that the defendant's objection was tenable One of the purposes of assembling the bones was to show the height of the skeleton, to demonstrate that it was that of a female and one of the physicians made use of the bones in explaining the difference in the bones of the male and the female The condition of the skull, and whether a fracture found in it was made before or after death, was a matter of direct conflict between the experts of the state and the one called by the defendant The bones were in the same condition as when found, they were used, and legitimately so, by the physicians in giving their testimony, and the court preceives no basis for the claim that such gruesome exhibit was made to prejudice the jury

Influenzal Pneumonia with Reference to Military Service—Statistics

(Gorder v Lincoln Nat Life Ins Co (N D) 180 N W R 514)

The Supreme Court of North Dakota says that this action was brought by the beneficiary of a policy of life insurance, to recover for the death of the insured, which occurred Oct 14 1918 from pneumonia, at the base hospital at Liverpool, about a week after his debarkation as a member of a battery of field artillery The policy contained a war clause which required the insured to obtain permission from the insurance company to engage in military or naval service in time of war and to pay an extra premium, or the company's liability should not be greater than the legal reserve on the policy In affirming a judgment in favor of the plaintiff, the court takes the position that on the record in this case it cannot say that the death of the insured was in consequence of military service Under the language of the provision in question, each individual case is to be determined on its own facts In other words, whether or not the death of the insured in a particular case was in consequence of such service within such provision is a question of fact to be determined on all of the evidence of the circumstances surrounding the insured at the time of his death Where a death is occasioned by a disease epidemic at the time among both the civilian and the military populations the court cannot find from statistics alone which apparently show a greater mortality in the army as a whole than among the civil population, that the insured died in consequence of military service Some statistics offered would seem to show that there were about six deaths in the army from influenzal pneumonia to one in civil life among a similar number of people, and that the disease was much more prevalent in the army than in civil life But these statistics were admitted to be very unreliable, for, as was remarked in the report of the state board of health for the biennial period ending June 30 1920, "case reports were most inaccurate and thousands never saw a physician," whereas in the army every man was under constant observation for pathologic symptoms and no case of disease would be likely to be overlooked Furthermore the age of susceptibility to the particular disease in question is greatest and the mortality highest among those of military age, and of these it has been observed that it bore heaviest on the most vigorous The removal of so large a number of vigorous persons of this age from civil life would naturally have a tendency both to lessen the mortality rate for civil life and to accelerate it for military life The outstanding fact in this case was that the hazard to the lives of both the military and civil population was increased several fold by the prevalence of the pandemic of influenzal pneumonia Statistical data thus far compiled show wide variation of mortality in different sections of the country and in different army camps Both soldiers and

civilians suffered from a common disease, whereas the high death rates due to diseases in the armies assembled in former wars were occasioned by diseases more peculiar to military life However the policy in question might be construed in reference to diseases that are more peculiarly prevalent in army camps than in civil life, so that a death from such a disease might be regarded as a death in consequence of such service, the court is of the opinion that on the record in this case it cannot say that the death of the insured was in consquence of such service The burden resting on the defendant company to establish that death resulted from military service was not sustained when no evidence was introduced showing the sanitary conditions in the various camps in which the insured was stationed and on the army transport on which he sailed, or in the military unit to which he was attached

Diagnosis and Treatment of Injury to Knee

(Dillisha v et ux v Bell (S C) 105 S E R 410)

The Supreme Court of South Carolina in reversing a judgment obtained by the plaintiffs, says that Mrs Dillishaw in some way fell to the floor and injured one of her knees The defendant was called to attend her He made such examination as he could but found that the knee was too painful to make a thorough examination and, not having an anesthetic with him, went to get one When he returned the same night, he brought another physician to assist him The two agreed that the injury was the result of a torn muscle, and not a broken patella They bound up the knee with a figure-of-8 bandage The knee did not get well, and Mrs Dillishaw called in a Dr Fuller, whose diagnosis was a broken patella Dr Fuller called to his assistance another physician, who was doubtful A roentgenogram was taken, and it confirmed the diagnosis of Dr Fuller Subsequently Dr Fuller and his assistant performed an operation on the knee and cured it The defendant quit the case when Dr Fuller was called The defendant was charged with negligence in making the diagnosis, in the treatment, and in a premature discharge of the plaintiff as cured

With reference to the alleged negligence in the diagnosis the strongest point in the plaintiff's favor was the statement that there was an indentation on the knee that followed the break in the bone and large enough to hold the finger, but there was also undisputed evidence that a torn muscle would have produced the same depression The evidence was all one way—that an injured knee presents difficulties of diagnosis that mislead the most skilful physicians When Dr Fuller was asked whether the average practicing physician, who knew enough to practice, would have had any difficulty in making a diagnosis, he answered, 'I do not know what the average man would be able to determine" The fact that the assistant of Dr Fuller, who made a careful examination under the most favorable circumstances did not believe the patella to be broken, negatived the charge of negligence in the diagnosis When the testimony of the other witnesses, uncontradicted, was that a mistake in the diagnosis of the injury to a knee is liable to occur with the most skilful, was added then negligence in a diagnosis goes out of the case

Nor was there any evidence from which negligence in treatment could be inferred All of the physicians said that the figure-of-8 bandage was a well-recognized method of treating that kind of injury, even when the patella was broken It might be better to operate, but even operations are not always successful

As to the alleged premature dismissal The plaintiffs testified that the defendant told them that Mrs Dillishaw was cured and could walk, that this statement was untrue, and she could not walk at all The defendant denied this, and stated that he quit the case when he learned that Dr Fuller had been called in, and that is the proper practice If this statement were material, the case should have been sent to the jury It was not material There was nothing in the case to show that they had done or refrained from doing anything to their injury on account of the untrue statement The operation was not performed for months after they knew that the patella was broken More than this, even if the defendant did tell Mrs Dillishaw that she was cured and could walk, she knew better than any one else that she could not walk a step and was not cured There are some treacherous diseases in which visible manifestations disappear, but the skilled physician knows that the danger is not at an end The ordinary mortal does not know it, and may be misled, to his injury by a false statement This was not such a case No injury did or could have resulted from the alleged false statement, even if it was made Hence it was immaterial A verdict should have been directed for the defendant

Administration of Anesthetic to Alcoholic Patient

(London et al v Scott et al (Mont) 194 Pac R 488)

The Supreme Court of Montana, in affirming a judgment granting a nonsuit and dismissing the complaint, says that Dr Scott was charged with negligence in causing an anesthetic to be administered to one Charles Loudon when he was in an unfit physical condition, the patient dying before the intended operation on him for a comminuted fracture of the bones of the right forearm was commenced The fracture was sustained June 4 After waiting some time for the swelling in the arm to recede and the soreness to disappear, Dr Scott two or three times postponed operating because Loudon was suffering from acute alcoholism Finally July 17 Loudon went to the hospital more sober than he had been was induced to stay there overnight, during which time Dr Scott got him in as good condition as he could under the circumstances and the next morning prepared the patient to operate on him and had the anesthetic administered

The court does not think that the evidence, viewed in the light most favorable to the plaintiffs, reasonably tended to establish the negligence charged against Dr Scott The consensual transaction from which arises the relation of physician and patient does not imply absolute liability A physician is not an insurer, and a malpractice case does not differ in its essential ingredients from any other action for damages arising from negligence. The law does not presuppose that for every injury there must be a recovery in damages The gist of this action was negligence and actionable negligence arises only from a breach of legal duty Isolated cases may be found in which loose language is employed to the effect that the physician owes to the patient the duty to exercise his best care, skill and ability, but the doctrine is as illogical as the practical application of the rule would be ridiculous As has been said "No man is always at his best One who employs a professional man may expect from him the ordinary care and skill of his profession He is liable if he does not give this but more cannot be demanded" The object of the law on the one hand, is to guard the patient against the wrongful practice of ignorant or negligent men who hold themselves out as physicians or surgeons, and, on the other to protect the faithful practitioner of ordinary learning, skill and ability from loss in reputation or purse on account of matters for which it would be unreasonable to hold him responsible

The gravamen or material part of this case was negligence, and negligence cannot be inferred from the fact alone that the patient died The maxim "Res ipsa loquitur," the thing speaks for itself has no application to a case of this character Negligence is not to be presumed, it must be proved, and the plaintiffs were required to assume the burden of proving the negligence charged and that Loudon's death resulted proximately from such negligence From the very nature of the case each of these ultimate facts required for its proof the testimony of one qualified to give an expert opinion, and in the absence of such testimony the case failed It is not difficult to understand why expert testimony was not introduced The subject-matter did not admit of it The case made was one wherein the question whether the operation should have been undertaken on July 18 was addressed exclusively to the sound judgment of the surgeon in charge. The evidence led to but one conclusion That Dr Scott exercised a bona fide judgment and if under the circumstances an error was committed—and the evidence did not warrant such an assumption—it was merely an error of judgment for which he could not be held responsible in damages

It was suggested that Dr Scott could have detained Loudon in the hospital a sufficient time to remove the effects of his

intemperance, and that there was no emergency compelling the operation when it was undertaken, but there was no evidence to justify either assertion, and certainly there is no presumption that a physician has authority to detain his patient against the patient's will, any more than that he may operate on the patient without the patient's consent Whether the operation could have been performed as well at a later date was left to conjecture If the operation had been postponed longer, and serious results had followed to Loudon's arm, Dr Scott might have been called on to respond in damages for his negligence in failing to operate at the proper time The evidence was not sufficient to carry the case to the jury

Society Proceedings

COMING MEETINGS

Delaware State Medical Society Rehoboth Aug 16
Colorado Congress of Ophthalmology and Oto Laryngology Denver July 29 30
Minnesota State Medical Association Duluth Aug 24 26
Montana Medical Association of Billings July 13 14
Tri State Meeting (Oregon Washington and Idaho) Portland Ore, June 30 July 2

SOUTH DAKOTA STATE MEDICAL ASSOCIATION

Fortieth Annual Session held at Aberdeen May 25 26 1921

The President, DR HARRY T KENNEY, Pierre, in the Chair

Status of the Bone Graft in the Treatment of Fractures

DR MELVIN S HENDERSON, Rochester, Minn The bone graft is not necessary in the treatment of recent fractures The conservative closed method will always be the method preferred, and next in preference some form of internal fixation either by metal or by beef bone plates The bone graft is the method preferred in cases of nonunion, and the massive graft gives the best means of obtaining union Since the bone graft is absorbed in part, at least, it is safer from a clinical point of view to regard it as being completely absorbed and replaced by new bone It is essential, therefore, that the graft be large so that absorption will be slow, thus giving time for more callus to be deposited, and postoperative fixation must be firm enough and prolonged enough to protect the graft before heavy strain is allowed on the part The massive graft fulfils these requirements better than either the intramedullary or the inlay graft

Direct Laryngoscopy, Bronchoscopy and Esophagoscopy as Diagnostic Aids

DR C C HOAGLAND, Madison Peroral endoscopy is not a formidable or dangerous diagnostic procedure when performed by one with the proper training and experience A general anesthetic will be required in less than 50 per cent of all cases The greatest field for this method is in the laryngeal diseases of children Closer cooperation between the general practitioner and the specialist in this field will work to the advantage of all concerned

Prognosis and Treatment in Tuberculosis of Larynx

DR J B GREGG, Sioux Falls Laryngeal tuberculosis is found in 10 per cent of incipient cases, in 20 per cent of moderately advanced cases and in 42 per cent of far advanced cases of pulmonary tuberculosis The laryngeal prognosis varies directly with the extent of the pulmonary involvement The mortality within one year in incipient pulmonary tuberculosis with laryngeal involvement is three times as great as in the same type of pulmonary cases without the laryngeal complication The mortality within one year, in moderately advanced pulmonary tuberculosis with laryngeal involvement, is twice as great as in the same type of cases without the laryngeal complication In far advanced pulmonary tuberculosis with the laryngeal complications the mortality was 12 per cent higher than in the same class of cases without the laryngeal involvement Involvement of the epiglottis or extensive involvement throughout the larynx indicates a poor prognosis, both as regards life and as regards probability of improving the laryngeal condition The improvement or lack of improvement in the larynx, if treated carefully, parallels closely (with exceptions) the improvement or lack of improvement in the lungs and general condition

Acute Glandular Fever in Children

DR GOLDIE ZIMMERMAN, Sioux Falls Glandular fever is contagious It is a disease of childhood, although cases are reported among adults Its pathology is obscure Evidence points to the possibility of a streptococcus infection, which enters by the way of the throat and gives rise to angina and later localizes in the lymph nodes The prognosis is favorable in most cases Many weeks are required before recovery is complete The patient's health is seriously impaired Fatalities are usually due to nephritis Few cases go on to suppuration, and this rarely occurrs in more than one gland mass Treatment consists in rest in bed, isolation, light diet, an ice bag to the neck, and cool sponging Calomel and salicylates are of some value After recovery the patient usually shows a marked anemia which calls for treatment

Prevention of Acidosis in Treatment of Diabetes

DR MICHAEL EBERT, Webster The cause of acidosis is the overproduction of nonvolatile acids which fix base and deplete the alkali reserve The great source of these acid bodies is the combustion of fat without the presence of carbohydrates Consequently, to prevent or treat acidosis, we should avoid all fat and push carbohydrate intake In the treatment of coma, alkali therapy is dangerous and should be abandoned

Negative Pressure in Empyema

DR N O RAMSTAD, Bismarck, N D My associate, Dr A E Brix, developed an apparatus which will be of considerable help in the treatment of empyema The apparatus consists of a rubber belt holding a drainage tube and a Dakin tube tightly, and an electrically driven vacuum pump controlled by a manometer By means of this apparatus, after a thoracotomy has been performed, it is possible to maintain a constant negative pressure of definite amount in the pleura It automatically removes the pus and keeps the lung distended, and it allows the free use of any antiseptic solution in the pleura, without removal of the apparatus The negative pressure has been very valuable in the treatment of unhealed chronic cases in which operation had been performed

When Shall We Operate for Mastoiditis?

DR FREDERICK E FRANCHERE, Sioux City, Iowa When the pain and tenderness show no tendency to subside, when the discharge from the ear persists or increases in quantity and the general condition of the patient is not improving, it is time to make a complete exenteration of every mastoid cell that can be found

Suppurative Appendicitis

DRS H J BARTON and C E SHERWOOD, Watertown, Iowa In the diagnosis of the condition we depend on history of previous typical attack of appendicitis, abdominal pain, sudden cessation of the pain, indicating that the pressure has been suddenly relieved, variable temperature, abdominal sensitiveness, nausea and vomiting, tumor, leukocytosis, and condition of pulse The method of handling these cases is operative The appendix is removed in practically every case When possible the stump is invaginated Our mortality—6 435 per cent—is low In 202 consecutive cases there have been thirteen deaths

Diagnosis and Treatment of Osteomyelitis

DR A C STOKES, Omaha The acute form of osteomyelitis demands early surgical treatment if the limb is to be saved from either a long period of infection or entire loss The symptoms are, in order of importance, sudden onset of pain, high temperature tenderness, swelling, local redness, history of trauma, either real or imaginary and considerable prostration The earlier the bone is opened, the sooner the extension of the infection is limited and the less frequent the sequels The point of greatest tenderness is the point to be chosen for operation

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Diseases of Children, Chicago

June 1921 21, No 6

Standards of Basal Metabolism in Normal Infants and Children F B Talbot Boston
*Reflexes in Early Infancy C W Burr Philadelphia —p 529
Factor of Position of Diaphragm in Roentgen Ray Diagnosis of Enlarged Thymus H J Gerstenberger Cleveland —p 534
*Empyema in Children W F Ladd and G D Cutler Boston —p 546
Changes in Form and Dimensions of Chest at Birth and in Neonatal Period R E Scammon and W H Rucker Minneapolis —p 552
*Absorption of Fluid Injected into Peritoneal Cavity B S Denzer and A F Anderson New York —p 565
Physical Development of Tuberculous Children M L Blatt Chicago —p 575
Resume on Circulatory System Literature of 1920 H Calhoun Iowa City Ia —p 586

Reflexes in Early Infancy—Sixty-nine infants were examined by Burr, their ages varying from less than 1 hour old to 90 days old The deep and superficial reflexes (i e, knee, Achilles, chin, plantar, abdominal) may be present at birth but the absence of one or all in early infancy does not indicate disease The plantar jerk is very variable It may be absent up to the third month or longer or there may be extension or flexion of the toes, or at one time there may be one movement, at another the other Most frequently there is extension The movement may be rapid or deliberate The Achilles jerk is very frequently absent at birth (How late in life it may appear is unknown) Sometimes the abdominal jerk can be obtained only on stimulating the lowest third of the muscle When the reflexes appear after birth, their appearance does not occur in any regular order

Position of Diaphragm and Enlarged Thymus—The case of a patient, 17 months old is presented by Gerstenberger who under the fluoroscope and in the roentgenogram shows a wide shadow in the thymic region which according to present conception, is considered abnormal

Empyema in Children—From a study of 172 cases, Ladd and Cutler advise that a preliminary thoracentesis should be done to ascertain the type of infection, that in the streptococcus infections it is probable that aspiration or closed drainage through a tube would supply sufficient drainage and result in a lower mortality Cases of pneumococcus empyema closed drainage is useful as a temporary measure in the case of the extremely sick patients but it is not to be recommended as the operation of choice The causes of so called collapsed lung is not the presence of atmospheric pressure through an open wound, but the result of inadequate operation and drainage Operations causing collapse of the chest wall as recommended by Estlander and Schede are contraindicated because they cause distressing deformities and are unnecessary

Absorption of Fluid from Peritoneal Cavity—According to Denzer and Anderson absorption of fluid injected into the peritoneal cavity occurs in from twelve to forty-eight hours Intraperitoneal injection of saline solutions causes a temporary reaction—a sterile inflammation Abdominal puncture with a capillary tube provides a safe method for the diagnosis of very small quantities of peritoneal fluid and of following the course of an inflammatory reaction in the peritoneal cavity

American Journal of Ophthalmology, Chicago

May 1921 4, No 5

Physiologic Nature of Schlemm Canal M U Troncoso New York —p 321
Fixation Kindergarten Exercise in Ophthalmic Technic H Gifford Omaha —p 327
Etiology of Periodic Ophthalmia in Horses L Post St Louis —p 330
Intraocular Foreign Body a Surgical Ocular Emergency G S Derby Boston —p 334
Injuries to Eye Report of 1 051 Cases D M Campbell and J M Carter Detroit —p 336
Self Inflicted Eye Injuries M Londolt Paris —p 345
Hereditary Optic Atrophy J M Griscom Philadelphia —p 347
Traumatic Rupture of Internal Carotid into Cavernous Sinus I Hartshorne New York —p 353
Subnormal Accommodation Result of Focal Infection P Sumner San Francisco —p 356
Some Varieties of Glaucoma Especially with Reference to Prognosis and Treatment G H Burnham, Toronto Can —p 358
New Retinoscope A G Bennett Buffalo —p 361
Fixation of Eyeball Perpendicular to Section A Perlmann Iserlohn Ger —p 362
Traumatic Myopia J H Bailey Brooklyn —p 363
Neuroretinitis Following Salvarsan Injection P W Oden and W B White Shreveport La —p 365
Corneal and Scleral Measurements of Intraocular Tension with Brown Tonometer E J Brown Minneapolis —p 365

American Journal of Physiology, Baltimore

May 1 1921 56, No 1

*Reactions to Hemorrhage W J Meek and J A E Eyster Madison Wis —p 1
Activation of Muscle Catalase by Liver T C Burnet San Francisco —p 16
*Source of Diastases of Blood L H David and E L Ross Chicago —p 22
Changes in Catalase Content During Life Cycle W E Burge and F L Burge Urbana Ill —p 29
*Nutritive Value of Yeast in Bread P B Hawk C A Smith and O Bergeim Philadelphia —p 33
Effect of Suckling and Castration on Lactating Mammary Gland in Rat and Guinea Pig C Kuramitsu and L Loeb St Louis —p 40
Diet and Sex as Factors in Creatinuria of Man G Stearns and H B Lewis Urbana Ill —p 60
Studies on Visceral Sensory Nervous System VIII Presence of Vasomotor Fibers in Vagus Nerve to Pulmonary Vessels of Amphibian and Reptilian Lung A B Luchhardt and A J Carlson Chicago —p 72
Paradoxical Pupil Dilatation Following Lesions of Afferent Paths J Byrne New York —p 113
Fatigue in Frog Muscle When Immersed in Various Concentrations of Lipoid Solvents Especially Higher Alcohols F M Baldwin Ames, Iowa —p 127
Ameboid Movement Tissue Formation and Consistency of Protoplasm L Loeb St Louis —p 140
Distribution of Iodin Between Cells and Colloid in Thyroid III Effect of Stimulation of Vagosympathetic Nerve on Distribution and Concentration of Iodin in Dog's Thyroid H B Van Dyke Chicago —p 168
Extensibility of Muscle I Effect of Stretching on Development of Fatigue in Muscle N B Eddy and A W Downs Edmonton Can —p 182
Id II Production of Carbon Dioxid by Muscle When It is Made to Support a Weight N B Eddy and A W Downs Edmonton Can p 188
Studies of Thyroid Apparatus I Stability of Nervous System as Factor in Resistance of Albino Rat to Loss of Parathyroid Secretion F S Hammett Philadelphia —p 196
*Studies in Nutrition VI Nutritive Value of Proteins of Lima Bean Phaseolus Lunatus A J Finks and C O Johns Washington D C —p 205
Id VII Nutritive Value of Proteins of Adsuki Bean Phaseolus Angularis C O Johns and A J Finks Washington D C —p 208
Epinephrin Output Estimated by Collecting Suprarenal Blood Without Opening Abdomen G N Stewart and J M Rogoff Cleveland —p 213
Postoperative Depletion of Epinephrin Store of Suprarenals G N Stewart and J M Rogoff Cleveland —p 220

Reactions to Hemorrhage—The effect of hemorrhage on the diastolic heart size of the dog was studied by Meek and Eyster by means of the roentgen ray In anesthetized animals under artificial respiration the cardiac output and venous pressures have been determined after bleeding by cardiometers and manometers In the intact animal hemorrhage amounting to about 2 1 per cent of the body weight is necessary before the diastolic heart size and presumably the output is reduced In the anesthetized animal with open chest, the minute volume output is maintained with the exception of a slight drop immediately after bleeding, until the total hemorrhage equals about 1 2 per cent of the body weight Various mechanisms which might account for maintenance of cardiac output under these conditions are discussed The only satisfactory explanation seems to be that the effective circulation is kept up by constriction of venules and capillaries particularly those which have been more or less stagnant Evidence in support of this idea is submitted When hemorrhage in the intact animal reaches about 2 per cent of the body weight the venules and capillaries of the ear may be seen markedly to constrict Since such a mechanism is thus shown to exist it becomes probable that it may have been operating in various parts of the body in earlier stages of the hemorrhage and that in this way there was provided a constant venous return and cardiac output even though the blood volume was decreased

intemperance, and that there was no emergency compelling the operation when it was undertaken, but there was no evidence to justify either assertion, and certainly there is no presumption that a physician has authority to detain his patient against the patient's will, any more than that he may operate on the patient without the patient's consent Whether the operation could have been performed as well at a later date was left to conjecture If the operation had been postponed longer and serious results had followed to Loudon's arm Dr Scott might have been called on to respond in damages for his negligence in failing to operate at the proper time The evidence was not sufficient to carry the case to the jury

Society Proceedings

COMING MEETINGS

Delaware State Medical Society Rehoboth Aug 16
Colorado Congress of Ophthalmology and Oto Laryngology Denver July 29 30
Minnesota State Medical Association Duluth Aug 24 26
Montana Medical Association of Billings July 13 14
Tri State Meeting (Oregon Washington and Idaho) Portland Ore, June 30 July 2

SOUTH DAKOTA STATE MEDICAL ASSOCIATION

Fortieth Annual Session held at Aberdeen May 25 26 1921

The President, Dr HARRY T KENNEY, Pierre, in the Chair

Status of the Bone Graft in the Treatment of Fractures

Dr MELVIN S HENDERSON, Rochester, Minn The bone graft is not necessary in the treatment of recent fractures The conservative closed method will always be the method preferred, and next in preference some form of internal fixation either by metal or by beef bone plates The bone graft is the method preferred in cases of nonunion, and the massive graft gives the best means of obtaining union Since the bone graft is absorbed in part, at least, it is safer from a clinical point of view to regard it as being completely absorbed and replaced by new bone It is essential, therefore, that the graft be large so that absorption will be slow, thus giving time for more callus to be deposited, and postoperative fixation must be firm enough and prolonged enough to protect the graft before heavy strain is allowed on the part The massive graft fulfils these requirements better than either the intramedullary or the inlay graft

Direct Laryngoscopy, Bronchoscopy and Esophagoscopy as Diagnostic Aids

Dr C C HOAGLAND, Madison Peroral endoscopy is not a formidable or dangerous diagnostic procedure when performed by one with the proper training and experience A general anesthetic will be required in less than 50 per cent of all cases The greatest field for this method is in the laryngeal diseases of children Closer cooperation between the general practitioner and the specialist in this field will work to the advantage of all concerned

Prognosis and Treatment in Tuberculosis of Larynx

Dr J B GREGG, Sioux Falls Laryngeal tuberculosis is found in 10 per cent of incipient cases, in 20 per cent of moderately advanced cases, and in 42 per cent of far advanced cases of pulmonary tuberculosis The laryngeal prognosis varies directly with the extent of the pulmonary involvement The mortality within one year in incipient pulmonary tuberculosis with laryngeal involvement is three times as great as in the same type of pulmonary cases without the laryngeal complication The mortality within one year, in moderately advanced pulmonary tuberculosis with laryngeal involvement, is twice as great as in the same type of cases without the laryngeal complication In far advanced pulmonary tuberculosis with the laryngeal complications the mortality was 12 per cent higher than in the same class of cases without the laryngeal involvement Involvement of the epiglottis or extensive involvement throughout the larynx indicates a poor prognosis, both as regards life and as regards probability of improving the laryngeal condition The improvement or lack of improvement in the larynx, if treated carefully, parallels closely (with exceptions) the improvement or lack of improvement in the lungs and general condition

Acute Glandular Fever in Children

Dr GOLDIE ZIMMERMAN, Sioux Falls Glandular fever is contagious It is a disease of childhood, although cases are reported among adults Its pathology is obscure Evidence points to the possibility of a streptococcus infection, which enters by the way of the throat and gives rise to angina and later localizes in the lymph nodes The prognosis is favorable in most cases Many weeks are required before recovery is complete The patient's health is seriously impaired Fatalities are usually due to nephritis Few cases go on to suppuration, and this rarely occurrs in more than one gland mass Treatment consists in rest in bed, isolation, light diet, an ice bag to the neck, and cool sponging Calomel and salicylates are of some value After recovery the patient usually shows a marked anemia which calls for treatment

Prevention of Acidosis in Treatment of Diabetes

Dr MICHAEL EBERT, Webster The cause of acidosis is the overproduction of nonvolatile acids which fix base and deplete the alkali reserve The great source of these acid bodies is the combustion of fat without the presence of carbohydrates Consequently, to prevent or treat acidosis, we should avoid all fat and push carbohydrate intake In the treatment of coma, alkali therapy is dangerous and should be abandoned

Negative Pressure in Empyema

Dr N O RAMSTAD, Bismarck, N D My associate, Dr A E BRIX, developed an apparatus which will be of considerable help in the treatment of empyema The apparatus consists of a rubber belt holding a drainage tube and a Dakin tube tightly, and an electrically driven vacuum pump controlled by a manometer By means of this apparatus, after a thoracotomy has been performed, it is possible to maintain a constant negative pressure of definite amount in the pleura It automatically removes the pus and keeps the lung distended and it allows the free use of any antiseptic solution in the pleura, without removal of the apparatus The negative pressure has been very valuable in the treatment of unhealed chronic cases in which operation had been performed

When Shall We Operate for Mastoiditis?

Dr FREDERICK E FRANCHERE, Sioux City, Iowa When the pain and tenderness show no tendency to subside, when the discharge from the ear persists or increases in quantity and the general condition of the patient is not improving it is time to make a complete exenteration of every mastoid cell that can be found

Suppurative Appendicitis

Drs H J BARTON and C E. SHERWOOD, Watertown, Iowa In the diagnosis of the condition we depend on history of previous typical attack of appendicitis, abdominal pain, sudden cessation of the pain, indicating that the pressure has been suddenly relieved, variable temperature, abdominal sensitiveness, nausea and vomiting, tumor, leukocytosis, and condition of pulse The method of handling these cases is operative The appendix is removed in practically every case When possible the stump is invaginated Our mortality—6 435 per cent—is low In 202 consecutive cases there have been thirteen deaths

Diagnosis and Treatment of Osteomyelitis

Dr A C STOKES, Omaha The acute form of osteomyelitis demands early surgical treatment if the limb is to be saved from either a long period of infection or entire loss The symptoms are, in order of importance, sudden onset of pain, high temperature, tenderness, swelling, local redness, history of trauma, either real or imaginary and considerable prostration The earlier the bone is opened, the sooner the extension of the infection is limited and the less frequent the sequels The point of greatest tenderness is the point to be chosen for operation

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Diseases of Children, Chicago

June 1921 21, No 6

Standards of Basal Metabolism in Normal Infants and Children F B Talbot, Boston
Reflexes in Early Infancy C W Burr Philadelphia —p 529
Factor of Position of Diaphragm in Roentgen Ray Diagnosis of Enlarged Thymus H J Gerstenberger Cleveland —p 534
Empyema in Children W P Ladd and C D Cutler Boston —p 546
Changes in Form and Dimensions of Chest at Birth and in Neonatal Period R L Scammon and W H Rucker Minneapolis —p 552
*Absorption of Fluid Injected into Peritoneal Cavity B S Denzer and A F Anderson New York —p 6
Physical Development of Tuberculous Children M L Blatt Chicago —p 575
Examine on Circulatory System Literature of 1920 H Calhoun Iowa City Ia —p 586

Reflexes in Early Infancy—Sixty nine infants were examined by Burr, their ages varying from less than 1 hour old to 90 days old The deep and superficial reflexes (i e, knee Achilles, chin, plantar, abdominal) may be present at birth but the absence of one or all in early infancy does not indicate disease The plantar jerk is very variable It may be absent up to the third month or longer or there may be extension or flexion of the toes, or at one time there may be one movement at another the other Most frequently there is extension The movement may be rapid or deliberate The Achilles jerk is very frequently absent at birth (How late in life it may appear is unknown) Sometimes the abdominal jerk can be obtained only on stimulating the lowest third of the muscle When the reflexes appear after birth, their appearance does not occur in any regular order

Position of Diaphragm and Enlarged Thymus—The case of a patient, 17 months old is presented by Gerstenberger who under the fluoroscope and in the roentgenogram shows a wide shadow in the thymic region which according to present conception, is considered abnormal

Empyema in Children—From a study of 172 cases, Ladd and Cutler advise that a preliminary thoracentesis should be done to ascertain the type of infection that in the streptococcus infections it is probable that aspiration or closed drainage through a tube would supply sufficient drainage and result in a lower mortality Cases of pneumococcus empyema closed drainage is useful as a temporary measure in the case of the extremely sick patients but it is not to be recommended as the operation of choice The causes of so called collapsed lung is not the presence of atmospheric pressure through an open wound but the result of inadequate operation and drainage Operations causing collapse of the chest wall as recommended by Estlander and Schede are contraindicated because they cause distressing deformities and are unnecessary

Absorption of Fluid from Peritoneal Cavity—According to Denzer and Anderson, absorption of fluid injected into the peritoneal cavity occurs in from twelve to forty eight hours Intraperitoneal injection of saline solutions causes a temporary reaction—a sterile inflammation Abdominal puncture with a capillary tube provides a safe method for the diagnosis of very small quantities of peritoneal fluid and of following the course of an inflammatory reaction in the peritoneal cavity

American Journal of Ophthalmology, Chicago

May 1921 4, No 5

Physiologic Nature of Schlemm Canal M U Troncoso New York —p 321
Fixation Kindergarten Exercise in Ophthalmic Technic H Gifford Omaha —p 327
Etiology of Periodic Ophthalmia in Horses L Post St Louis —p 330
Intraocular Foreign Body a Surgical Ocular Emergency G S Derby Boston —p 334
Injuries to Eye Report of 1 051 Cases D M Campbell and J M Carter Detroit —p 336
Selft Inflicted Eye Injuries M Londolt Paris —p 345
Hereditary Optic Atrophy J M Griscom Philadelphia —p 347
Traumatic Rupture of Internal Carotid into Cavernous Sinus I Hartshorne New York —p 353
Subnormal Accommodation Result of Focal Infection P Sumner in Francisco —p 356
Some Varieties of Glaucoma Especially with Reference to Prognosis and Treatment G H Burnham, Toronto Can —p 358
New Retinoscope A G Bennett Buffalo —p 361
Fixation of Eyeball Perpendicular to Section A Perlmann Iserlohn Ger —p 362
Traumatic Myopia J H Bailey Brooklyn —p 363
Acute retinitis Following Salvarsan Injection P W Oden and W B White Shreveport La —p 365
Corneal and Scleral Measurements of Intraocular Tension with Brown Tonometer E J Brown Minneapolis —p 365

American Journal of Physiology, Baltimore

May 1 1921 56 No 1

Reactions to Hemorrhage W J Meek and J A E Eyster Madison Wis —p 1
Activation of Muscle Catalase by Liver T C Burnet San Francisco —p 16
Source of Diastases of Blood L H David and E L Ross Chicago —p 22
Changes in Catalase Content During Life Cycle W E Burge and I I Burge Urbana Ill —p 29
Nutritive Value of Yeast in Bread P B Hawk C A Smith and O Bergeim Philadelphia —p 33
Effect of Suckling and Castration on Lactating Mammary Gland in Rat and Guinea Pig C Kuramitsu and L Loeb St Louis —p 40
Diet and Sex as Factors in Creatinuria of Man G Stearns and H B Lewis Urbana Ill —p 60
Studies on Visceral Sensory Nervous System VIII Presence of Vasomotor Fibers in Vagus Nerve to Pulmonary Vessels of Amphibian and Reptilian Lung A B Luckhardt and A J Carlson Chicago —p 72
Paradoxical Pupil Dilatation Following Lesions of Afferent Paths I Byrne New York —p 113
Fatigue in Frog Muscle When Immersed in Various Concentrations of Lipoid Solvents Especially Higher Alcohols F M Baldwin Ames Iowa —p 127
Amoeboid Movement Tissue Formation and Consistency of Protoplasm L Loeb St Louis —p 140
Distribution of Iodin Between Cells and Colloid in Thyroid III Effect of Stimulation of Vagosympathetic Nerve on Distribution and Concentration of Iodin in Dog's Thyroid H B Van Dyke Chicago —p 168
Extensibility of Muscle I Effect of Stretching on Development of Fatigue in Muscle N B Eddy and A W Downs Edmonton Can —p 187
Id II Production of Carbon Dioxid by Muscle When It is Made to Support a Weight N B Eddy and A W Downs Edmonton Can p 188
Studies of Thyroid Apparatus I Stability of Nervous System as Factor in Resistance of Albino Rat to Loss of Parathyroid Secretion F S Hammett Philadelphia —p 196
*Studies in Nutrition VI Nutritive Value of Proteins of Lima Bean Phaseolus Lunatus A J Finks and C O Johns Washington D C —p 205
II VII Nutritive Value of Proteins of Adsuki Bean Phaseolus Angularis C O Johns and A J Finks Washington D C —p 208
Epinephrin Output Estimated by Collecting Suprarenal Blood Without Opening Abdomen G N Stewart and J M Rogoff Cleveland —p 213
Postoperative Depletion of Epinephrin Store of Suprarenals G N Stewart and J M Rogoff Cleveland —p 220

Reactions to Hemorrhage—The effect of hemorrhage on the diastolic heart size of the dog was studied by Meek and Eyster by means of the roentgen ray In anesthetized animals under artificial respiration the cardiac output and venous pressures have been determined after bleeding by cardiometers and manometers In the intact animal hemorrhage amounting to about 21 per cent of the body weight is necessary before the diastolic heart size, and presumably the output, is reduced In the anesthetized animal with open chest, the minute volume output is maintained with the exception of a slight drop immediately after bleeding, until the total hemorrhage equals about 1 2 per cent of the body weight Various mechanisms which might account for maintenance of cardiac output under these conditions are discussed The only satisfactory explanation seems to be that the effective circulation is kept up by constriction of venules and capillaries particularly those which have been more or less stagnant Evidence in support of this idea is submitted When hemorrhage in the intact animal reaches about 2 per cent of the body weight the venules and capillaries of the ear may be seen markedly to constrict Since such a mechanism is thus shown to exist it becomes probable that it may have been operating in various parts of the body in earlier stages of the hemorrhage and that in this way there was provided a constant venous return and cardiac output even though the blood volume was decreased

Source of Blood Diastases—Davis and Ross conclude that the pancreas is practically the only source of the blood diastases

Nutritive Value of Yeast in Bread—Hawk and his associates claim that flour containing 5 per cent of yeast powder makes a palatable bread much more nutritious than ordinary bread The yeast supplements both the water soluble B and protein content of wheat flour Yeast is thus a nutrient constituent of bread, and any increase in its amount up to quantities far in excess of those ordinarily used will improve the food value of the product

Nutritive Value of Lima Bean—A diet of cooked lima bean meal supplemented with 0 3 per cent of cystine, together with the other necessary nonprotein dietary ingredients, furnished adequate protein for the normal growth of albino rats A similar diet to which no cystine was added, merely maintained the weight of the experimental animals Growth did not occur if the diet consisted of either raw or cooked lima bean meal which was not supplemented with cystine although the other nonprotein dietary factors were added

Nutritive Value of Adsuki Bean—Raw or cooked adsuki bean meal supplemented with cystine furnished adequate protein and water soluble vitamin for normal growth Similar diets without the addition of cystine enabled the albino rats to grow at only one third to two thirds of the normal rate Comparable results were obtained with the isolated adsuki bean globulin

American Journal of Roentgenology, New York

May 1921, 8, No 5

Absorption of Radium Radiations by Tissues G Failla New York—p 215
Personal Experience with Application of Newer Roentgen Ray Therapy in Cancer M J Sittenfield New York—p 232
Clinical Results from Newer Technic of Deep Roentgen Ray Therapy in Malignant Diseases G E Pfahler Philadelphia—p 236
New Device for Increasing Protection of Both Patient and Roentgenologist G E Pfahler Philadelphia—p 239
*Roentgen Ray Treatment of Pulmonary Tuberculosis W Wilkinson Phoenix Ariz—p 241
Roentgen Ray Study of Dust Inhalation in Granite Industry D C Jarvis Barre Vt—p 244
Roentgen Ray Shadows of Lung Syphilis and Syphilitic Tuberculous Symbiosis in Lungs W W Watkins Phoenix Ariz—p 259
Aneurysm of Aorta and Abscess of Tracheobronchial Lymph Glands R D Carman and C G Sutherland Rochester Minn—p 269
*Pelvimetry by Means of Roentgen Ray W E Chamberlain and R R Newell San Francisco—p 272
Present Problems and Future Prospects of Deep Roentgen Ray Therapy A Soiland Los Angeles—p 276

Roentgen-Ray Therapy of Pulmonary Tuberculosis—Wilkinson claims that when roentgen-ray therapy is used properly in incipient tuberculosis, especially with those patients who have improved or are at a standstill, most of them will be benefited decidedly As in pneumonia, inflammation and congestion are relieved adhesions are absorbed to some extent, lymphocytes are increased, infected lymph glands become shriveled and cease to be foci of infection Fibrosis and calcification are promoted, the pulse rate is lowered, and the blood pressure approaches normal With the improved circulation and elimination patients sleep and eat better and gain in weight Expectoration becomes at first freer and then thinner and gradually decreases The cases progress toward complete arrest much more rapidly than they would without roentgen-ray therapy Wilkinson gives treatments three times a week alternately exposing the anterior and the posterior chest using 2 to 3 ma, 6 in spark, 15 in distance five to ten minutes time, and 3 mm of aluminum as filter In many cases, we begin with a dose somewhat less than the above, especially if the patient has a rapid heart and slight elevation of temperature, applying the lesson taught by heliotherapy, that the tuberculous patient must begin with very short sun baths

Pelvimetry by Means of Roentgen Ray—A method is described by Chamberlain and Newell for measuring bony dimensions, notably of the female pelvis by means of roentgen rays The special apparatus required comprises 1 A cross-arm plumb-bob 2 An aluminum filter with small lead ring from which to hang the bob 3 A light bar of known length for an automatic check on the accuracy of the exposure making 4 A special scale to lessen the burden of the calculations

American Review of Tuberculosis, Baltimore

May 1921, 5, No 3

Studies on Tuberculous Infection VIII Spontaneous Pneumokonic is in Guinea Pig H S Willis Baltimore—p 189
*Focal Reaction W I Petersen Chicago—p 218
*Importance of Subliminal Symptoms and Period of Alternation of Rest and Exercise in Treatment of Pulmonary Tuberculosis H Sewall Denver—p 236
*Additional Diagnostic Methods for Cases of Suspected Intra Ocular Tuberculosis A H W Caulfeild Toronto—p 253
Suprarenals and Thyroid in Experimental Tuberculosis G B Webb G B Gilbert and C T Ryder Colorado Springs Colo—p 266

Focal Reaction—In view of the demonstrated fact that tuberculous foci may react to nonspecific stimuli and conversely that nontuberculous foci may react to tuberculin, the fallacy of the purely specific concept of the local reaction is discussed by Petersen Focal reactions occur (1) about inflammatory foci of infectious origin, (2) about localized foci endogenous or traumatic in origin and (3) on the basis of diathesis Such reactions take place not only after specific stimulation but after a wide variety of biologic alterations in the organism This widened concept of the focal reaction would seem to make clear a numer of common clinical observations such as the flaring up of gallbladder, appendiceal, arthritic or other localized inflammatory foci after remote trauma vaccination gastro-intestinal disturbance, roentgen-ray exposure fatigue, chilling etc The focal reaction no matter how elicited is essentially a diphasic phenomenon, consisting in an augmentation of inflammation, followed by a diminution and a tendency to complete restoration to the normal In the mechanism of the focal reaction in tuberculosis at least three factors are involved (1) a true and strictly specific sensitization of the organism against proteins and (2) a nonspecific reaction about the tubercle. In the therapeutic application of the focal reaction in nontuberculous disease attention is directed to the fact that favorable results have been reported from combined nonspecific stimulation and the use of etiotropic agents Thus milk injections and mercury (in syphilis), tuberculin and mercury (in general paresis) milk injections and salicylates (in arthritis), milk injections and luminal (in epilepsy), arsphenamin and tuberculin (in lupus), etc, have been reported in this connection

Rest and Exercise in Treatment of Tuberculosis—Based on the common experience that clinical deterioration due to tuberculous disease is not only accompanied but is preceded by more or less well recognized pathologic symptoms it is maintained by Sewall that on investigation each patient will commonly disclose a range of pathologic symptoms far less obtrusive than those usually apparent to the physician, and the recognition of these may lead much earlier than is usual to proper treatment Based on the fact that autoinoculations in the tuberculous subject may lead to disaster or to cure, depending on the phase of vital reaction at which each inoculation succeeds the preceding, it is shown by clinical experience and by experimental inquiry that the clinician should take careful account of the length of the rest interval between muscular exertions of certain patients It has been found that patients whose symptoms persist when even gentle exercise is taken daily may overcome this trouble when exercise is spaced on alternate days There is probably considerable divergence between the length of the "negative' and of "positive phases of reaction in different persons, and accordingly, the spacing of their exercise should differ An attempt has been made to draw a parallel between the obscure events marking the course of clinical tuberculosis and the immunologic reactions of animals in which the conditions of infection and inoculation can be experimentally controlled

Diagnosis of Intra-Ocular Tuberculosis—A recapitulation of what Caulfeild presents as additional diagnostic methods for cases of suspected intra-ocular tuberculosis might be put as follows A With regard to the methods themselves (1) A careful clinical and, frequently, a stereoscopic examination (2) The simultaneous use of inhibitive reaction the tuberculocomplement fixation reaction, and the estimation of the degree of tuberculin sensitiveness (3) The repetition of these tests, and if the diagnosis still remains in doubt the additional use of the general and focal reaction to tuberculin B With regard to the interpretation (1) The presence of a marked inhibitive reaction together with slight or even doubt-

ful complement fixation is in Caulfeild's opinion an absolute indication that the patient has an active tuberculous lesion, as well as a comparatively high work or resistance tolerance (2) With a marked inhibitive reaction alone he would hesitate to place on it the same amount of reliance, chiefly because of the greater possibility of the technical error (3) With a positive complement fixation reaction alone the degree of the reaction is of importance (4) In the event of certain of the 'indecisive' results indicated in 2 and 3, the tests should be repeated and if the reactions are unchanged they should be considered as suggestive only and taken together with the clinical data and with the history of the subsequent course of the case (5) Any marked variation in the degree of tuberculin sensitiveness should be considered as suggestive of tuberculous diseases rather than of infection (6) If the repetition of these tests gives the same 'negative' results the data should be regarded as of increasingly exclusive value in proportion to the number of such results, and the length of the period of observation

Suprarenals and Thyroid in Experimental Tuberculosis—Webb and his associates found that the suprarenals become enlarged in guinea-pigs in the course of generalized tuberculosis and also in progenic infections The thyroid also appears to enlarge in experimental tuberculosis of guinea-pigs, as well as in certain forms of human tuberculosis This enlargement of suprarenals and thyroid is probably in response to a demand for increased function and it may be desirable to supplement this tendency by giving suprarenal and thyroid extracts in selected cases of human tuberculosis

Boston Medical and Surgical Journal

June 9 1921 **184** No 23

*Prevention of Heart Disease H Emerson New York—p 587
Essential Factors of Cancer Causation J W Shannon San Diego Calif—p 608

Prevention of Heart Disease—Emerson claims that it is within the realm of possibility within the reach of present day medical and social knowledge and resources to make as much reduction in sickness and premature death from heart disease as has been obtained by teaching by diagnosis by organized medical services in the control of tuberculosis He urges not to await the coming of patients into offices but to search for them among the presumably healthy and attack these disabilities before the patient is aware of them and this through a development of a habit in the whole community to seek a thorough medical examination once a year for adults twice a year for children under 14 and always after apparent recovery from any acute febrile disease

Georgia Medical Association Journal, Atlanta

May 1921 **10** No 12

Radium Service of Harbin Hospital from Feb 1 1920 to Dec 1 1920 W H Lewis Rome—p 417
Nonsurgical Drainage of Pathologic Gallbladder G M Niles and H N Kraft Atlanta—p 418
Relief of Menorrhagia and Metrorrhagia by Roentgen Ray Treatment W A Cole Savannah—p 421
Importance of Early Diagnosis of Intracranial Lesions C E Dowman Atlanta—p 423
Fracture of Shaft of Femur K McCullough Waycross—p 425
New Navel Band and Better Way of Putting a Diaper on a Baby S A Visanska Atlanta—p 429
Analysis of Causes of Vomiting F O Chimene Rome—p 432
Emergency Head Surgery D B Ware Fitzgerald—p 435
Significance of Pain in Physical Diagnosis J T Moore Sycamore—p 436
Sacral Anesthesia H I Barker Carrolton—p 441
Diagnosis of Bone Disease by Roentgen Ray J J Clark—p 442
Quarantine Officer of Twenty Years Ago Versus Modern Health Officer M F Haygood Atlanta—p 444

Iowa State Medical Society Journal, Des Moines

May 15 1921 **11** No 5

Medical Profession Safe Guarding Americanism C J Whalen Chicago—p 153
Preparation for Motherhood W L Allen Davenport—p 159
Medical Journals and Campaign Against Cancer F J Osborne—p 161
Practical Points on Blood Pressure E S McCrea Eddyville—p 165
Use of Radium in Surgery E E Bamford Centerville—p 167
Treatment of Acne J F Auner Des Moines—p 171
Lethargic Encephalitis F M Fuller Keokuk—p 173

Johns Hopkins Hospital Bulletin, Baltimore

June 1921 **32** No 364

*Analysis of Twenty One Years Experience with Cesarean Section J W Williams Baltimore—p 173
Modern Methods in Handling Hospital Statistics R Pearl Baltimore—p 184
*Atypical Bacillus Paratyphosus B Infection H J Morgan Baltimore—p 195
Growth Requirements of Influenza Bacilli T M Rivers and A K Poole Baltimore—p 202
Gradual Withdrawal Method of Treating Morphinism A Mathematical Note J R Miner Baltimore—p 205
Formation of Vacuoles and Neutral Red Granules in Connective-Tissue Cells and Blood Cells Observed Under Abnormal Conditions R E Ingebrigtsen Baltimore—p 206

Cesarean Section—The 183 sections on 145 women analyzed by Williams occurred in a series of approximately 20 000 deliveries an incidence somewhat under 1 per cent The operations comprise 104 single, and seventy-nine repeated sections The following types of operation were done 121 typical conservative sections, four extraperitoneal sections one postmortem section and fifty-seven Porro sections The gross mortality was 5 46 per cent but, upon deducting the cases in which death was not attributable to the operation, the net mortality was 3 45 per cent or 4 07 per cent in the conservative and 1 82 per cent in the Porro sections All deaths except one from hemorrhage, were due to infection Disproportion due to contracted pelvis was the indication for interference in 144 cases The several varieties of rachitic pelvis afforded the predominant indication in the blacks as compared with the simple flat pelvis in the white The most frequent nonpelvic indications were eclampsia and serious cardiac decompensation The uterine cicatrix ruptured once in forty eight women with repeated sections as well as in twelve deliveries through natural passages subsequent to section Somewhat over one half of the children immediately after delivery and only 7 per cent were deeply asphyxiated The old superstition that boys originate from the right and girls from the left ovary can be definitely discarded In two thirds of the patients the corpus luteum persisted until the end of pregnancy and its location bore no relation to the sex of the child It is Williams conviction that cesarean section is being abused throughout the country and if accurate statistics as to its results were available that it would be found to be accountable for many unnecessary deaths

Atypical Paratyphosus B Infection—An organism was isolated by Morgan from the blood of a patient who initiated his general infection by the development of a cystopyelitis (the latter following urethral stricture) A bacteremia persisted over six weeks A septic fever was present with leukocytosis The organism was recovered on numerous occasions from the urine and blood but never from the stool With the cure of the urethral stricture and the subsidence of the cystitis and pyelitis the bacteremia disappeared and the patient apparently made a complete recovery The organism morphologically and culturally corresponds to *B paratyphosus* B yet serologically and antigenically it shows marked differences from the stock strains of *B paratyphosus* B The organism is a member of the group which has rather loosely been called Paratyphosus C It would not seem justifiable to employ the term Paratyphosus C' in connection with this organism it should rather be considered a variant of the *B paratyphosus* B originally described by Schottmuller

Cultivating Influenza Bacillus—Rivers and Poole claim that two factors are essential for the growth of influenza bacilli Both are in blood One resists autoclaving half an hour under 15 pounds pressure the other does not The autoclave labile substance is not hemoglobin although it may be derived from the blood pigment and as yet has not been found outside of blood The autoclave labile substance has been obtained also from yeast

Journal of Bacteriology, Baltimore

May 1921 **6**, No 3

Main Lines of Natural Bacterial System S Orla Jensen, Copenhagen—p 263
Variation in Typhoid Bacilli K I Morishima New York—p 275
Solid Culture Mediums with Wide Range of Hydrogen or Hydroxyl Ion Concentration F A Wolf and I V Shunk West Raleigh N C—p 325
Azotobacter Chroococcum Beij A Bonazzi Wooster Ohio—p 331

Variations in Typhoid Bacilli—The variations which may occur in the characteristics of typical typhoid bacilli in regard to their abilities to utilize carbohydrates, and their behavior to serum antibodies under various conditions of cultivation were investigated Morishima One hundred and thirty-eight cultures which had been carried on artificial mediums since their isolation from patients were employed Concerning the question whether certain of the variations from the normal type noted represent true mutations in the sense of de Vries, Morishima believes that this term which defined changes of a definite character occurring in higher plants should not be introduced into bacteriology All the alterations brought about by artificial environment in the typhoid bacillus were rapidly lost when the organisms were returned to the environments prevailing under the usual cultural conditions and in the case of the agglutinable strains, even in the course of persistent abnormal environment, the changes observed by others as well as by Morishima should properly be regarded as variants and cannot be spoken of with accuracy as mutations in the sense of de Vries

Journal of General Physiology, Baltimore

May 20 1921 **3**, No 5

Method of Studying Respiratory Exchange in Small Aquatic Organisms with Particular Reference to Use of Flagellates as an Indicator for Oxygen Consumption H M Fox Cairo Egypt—p 565
Phagocytosis of Solid Particles III Carbon and Quartz W O Fenn Boston—p 575
Studies on Enzyme Action XIX Sucrolytic Actions of Bananas K G Falk and G McGuire New York—p 595
Theory of Injury and Recovery III Repeated Exposures to Toxic Solutions W J V Osterhout Cambridge Mass—p 611
Rate of Growth of Dairy Cow Extrauterine Growth in Weight S Brody and A C Ragsdale Columbia Mo—p 623
Casein Viscosity Studies H F Zoller Washington D C—p 635
Significance of Latency Time in Enzyme Determination L G M Baas Becking Pacific Grove Calif—p 653
Associative Bacterial Action in Propionic Acid Fermentation J M Sherman and R H Shaw, Washington D C—p 657
Physiologic Zero Explanation of Departure from Linear Graph of Reaction Rate Values at Lower Temperatures J Krapfa Jr Athens Ga—p 659
Comparative Studies on Respiration XVII Decreased Respiration and Recovery O L Inman Cambridge Mass—p 663
Donnan Equilibrium and Physical Properties of Proteins I Membrane Potentials J Loeb New York—p 667
Donnan Equilibrium and Physical Properties of Proteins II Osmotic Pressure J Loeb New York—p 691

Journal of Industrial Hygiene, Boston

June 1921 **3** No 2

Pregnant Woman in Industry C P McCord and D K Minster Cincinnati—p 39
Method for Determining Finer Dust Particles in Air A L Meyer Baltimore—p 51
Aniline Poisoning in Rubber Industry P A Davis Akron Ohio—p 57
Oil Folliculitis C G Page and L D Bushnell Boston—p 62

Journal of Laboratory and Clinical Medicine, St Louis

May 1921 **6** No 8

*Chaulmoogra Oil in Treatment of Tuberculosis W L Culpepper and M Ableson Detroit—p 415
Pharmacologic Action of Lead in Organic Combination E C Mason Cincinnati—p 427
Resistance of Red Blood Cells I Resistance of Red Blood Cells in Health to Hemolytic Action of Sapotoxin C H Neilson and H Wheelon St Louis—p 454
*Test for Early Renal Insufficiency T B Magath Rochester Minn—p 463

Chaulmoogra Oil in Tuberculosis—Culpepper and Ableson report the results of their experimental work on tuberculous guinea-pigs treated with 1 per cent solutions of the soluble acid sodium salt of the four acid fractions of chaulmoogra oil

Test for Early Renal Insufficiency—Magath's work was done on the assumption that if a patient were fed uric acid and there was a slight lesion of the kidneys too small even to give a very marked rise of blood uric acid with a normal diet it might be possible to demonstrate an early inability of the kidneys to excrete uric acid and thus determine a possible prenephritic condition Usually about 2 gm of pure uric acid prepared from human urine were administered A determination was then made of the uric acid in blood The uric acid excreted during the next twenty-four hours was determined, at the end of this time a second blood uric acid determination was made and compared with that made at the time the drug was administered Caffein citrate was used in other cases, and here Magath was able to obtain calculated rises in the blood or urine according to whether the individual was normal or nephritic From this it would seem that caffein is excreted as uric acid or piles up as uric acid in the blood in cases of nephritis or else some other substance is formed that gives a blue color by the Folin and Wu method The dose used was about 1 gm caffein citrate in capsules at three one hour intervals just prior to the ingestion of a meal

Kentucky Medical Journal, Bowling Green

May 1921 **19**, No 5

Nephro Cardio Arterial Syndrome C Pope Louisville Ky—p 216
Reno Pulmonary Syndrome O O Miller Louisville—p 218
Reno Ophthalmic Syndrome C T Wolfe Louisville—p 219
Carcinoma in Cervical Stump After Supra Vaginal Hysterectomy Report of Three Cases L Frank Louisville—p 223
*Unusual Case of Tuberculosis O R Stuteville Big Clifty Ky—p 228
Trifacial Neuralgia Symptomatology and Treatment L W Frank Louisville—p 229
Management of Cancer of Rectum B Asman Louisville—p 234
Anomalous Appendix Uterine Myofibromas Parovarian Cysts Hydrocolpinx J G Sherrill Louisville—p 238
Injury to Wrist Case Report J G Sherrill Louisville—p 248
Case of Acute Communicating Hydrocephalus H E Tuley J W Moore and L R Ellars Louisville—p 249
Toxemia of Pregnancy, Report of Two Cases L Frank Louisville—p 254
Mammary Carcinoma in Female Aged 22 Years Case Report L Frank Louisville—p 256
Auricular Complications of Acute Infectious Diseases S G Dabney, Louisville—p 259
Pneumonia Its Management and Treatment C C Carroll, White Mills Ky—p 265
Medical Fads and Frauds A H Barkley Lexington Ky—p 268
Dilatation of Heart J T Dunn Arlington Ky—p 270
Full Time Pregnancy with Imperforate Hymen H A Davidson Louisville—p 272
Diagnosis of Pathological Conditions of Gall Bladder F P Strickler Jr Louisville—p 275
Secondary Parotitis L Kahn Louisville—p 276
Methods of Antirabic Treatment J McI Phillips Columbus Ohio—p 278
A Bullet Wound of the Femoral Artery W E Fallis Louisville—p 281
Treatment of Pott's Disease O O Miller Louisville—p 282
Roentgen Ray Therapy M Y Marshall Henderson Ky—p 284
Celluloid Splints R T Pirtle Louisville—p 287

Early Case of Pulmonary Tuberculosis—Stuteville reports a case of pulmonary tuberculosis in a child 11 months old Examination of the sputum showed presence of the tubercle bacillus

Medical Record, New York

June 11 1921 **99** No 24

Psychologic Study of Some Mental Defects in Normal Dull Adolescent L P Clark New York—p 991
Iodin in Treatment of Goiter S P Beebe New York—p 996
Medical Economics Problems E H Ochsner Chicago—p 999
Metabolimetry in Hyperthyroidism H R Harrower Glendale Calif—p 1003
Diagnosis in Tuberculosis O Paget Perth Australia—p 1005
Concept of Roentgen Ray Pathology A J Pacini Washington D C—p 1007

Missouri State Medical Association Journal, St Louis

June 1921 **18** No 6

Removing Health Departments from Politics W J Ferguson Sedalia—p 185
Thrombosis of Inferior Vena Cava Report of Case G H Hoxie and G H Thiele Kansas City—p 187
Extreme Cyanosis in Pulmonary Emphysema A E Taussig St Louis.—p 189
*New Method of Removing Median Bar Type of Prostatic Obstruction J R Caulk St Louis—p 191

Prostatectomy—Caulk describes his method in which he makes use of a specially constructed cautery punch He claims that this operation, owing to its simplicity, its freedom from hemorrhage, infection and other complications and from the fact that the results seems substantially good, offers itself as a method of choice for the group of prostatic obstructions, due to median bar formations or contractures of the vesical neck and for certain limited cases of lateral lobe obstructions Since it should be attended with practically no more mortality Caulk believes it commends itself as the method of surgical intervention for this type of obstruction and for the general lowering of the mortality rate of prostatic obstruction

Philippine Islands Medical Association Journal, Manila

January February, 1921 **1**, No 1

Legal Status of Medical Laboratories S De Los Angeles —p 1
Treatment of Ulcus Tropicum L Guerrero —p 4
Deterioration of Fluid Extract of Ergot T Garcia —p 8
Normal Deliveries Following Cesarean Section A Villarama —p 11
Right Diaphragmatic Hernia R Fernandez —p 12
*Two Cases of Scurvy in Breast Fed Infants A V Tupas —p 23

Scurvy in Breast Fed Infants—One of Tupas' patients was 2 months old and entirely breast fed since birth A careful study of the case eliminated every condition except scurvy No treatment was given except 5 c c of lemon juice in equal parts of sweetened water every three hours The patient was discharged nine days after admission as recovered The second patient was 1 month old and entirely breast fed since birth This patient likewise improved under the lemon juice treatment

Public Health Journal, Toronto

May 1921 **12**, No 5

Ontario Municipal Health Efforts R Wodehouse —p 193
Public Aspect of Tuberculosis T Royer —p 213
Establishing and Re Establishing of Breast Feeding E Haslam —p 221
Membership Enrolment Campaign of Canadian Red Cross Society Crusade For Good Health A H Abbott —p 225

Southern Medical Journal, Birmingham

June 1921 **14**, No 6

*Neutrophilic Myelocytes in Cerebrospinal Fluid of a Patient Suffering from Myeloid Leukemia and Their Significance for Diagnosis of Myeloleukemic Infiltration of Leptomeninges L F Barker Baltimore —p 437
*Diagnosis of Pernicious Anemia J P Schneider Minneapolis —p 442
Direct Aspiration of Contents of Biliary Tract Through Duodenal Tube Clinical Application and Therapeutic Possibilities of Method S K Simon New Orleans —p 447
Pediatric Pranks J R Snyder Birmingham —p 455
Intramuscular Blood Injections as Nutrition Aids T D Parke, Birmingham —p 460
Value of Nurse in Public Health Work in South J Van DeVrede Atlanta
Impressions Derived from One Hundred and Thirty Neurosurgical Cases C E Dowman Atlanta —p 470
Complete Severance of External Carotid Artery Anterior External and Internal Jugular Veins and Sternocleidomastoid Muscle from Razor Cut Recovery J L Crook Jackson Tenn —p 475
Ununited Fractures A Meyers Charlotte N C —p 479
Fibrous Cavernositis Induration of Corpora Cavernosa P Bromberg Nashville —p 480
Treatment of Placenta Praevia E Speidel Louisville —p 487
Eye in Relation to Ear Nose and Throat M Wiener and H W Loeb St Louis —p 491
Tonsils from Clinical and Pathological Standpoint E G Gill and K D Graves Roanoke Va —p 498

Neutrophilic Myelocytes in Cerebrospinal Fluid—In a single case Barker says it has been possible during life to demonstrate in the cerebrospinal fluid the presence of cells of leukemic origin (myelocytes and perhaps, myeloblasts) In no other case thus far reported has the presence of leukemic cells in the cerebrospinal fluid during life been described In the few instances in which lumbar puncture has been done in leukemia, the cerebrospinal fluid has been negative, or has merely shown a trace of blood or an increase of globulin The presence of cells of leukemic origin in the cerebrospinal fluid probably indicates a leukemic infiltration of the leptomeninges The majority of nervous complications in leukemia are not due to a leukemic leptomeningopathy, but to epidural infiltration, to infiltration of the nerve roots or of nerve ganglia, to infiltration of the nervous axis itself or to hemorrhages, degenerations or inflammations

Diagnosis of Pernicious Anemia—Schneider claims that in 80 per cent of all cases of pernicious anemia, there will appear sooner or later objective findings in one or more of the following fields (1) Loss of vibration sense in the distal ends of the long bones of the limbs particularly, is present in 80 per cent of the cases (2) Loss of position sense, or joint sense, with or without loss of vibration sense (3) Loss of tactile sense to cotton-wool in fingers and toes (4) There are motor disturbances either ataxic with loss of the deep reflexes, the spectroscopic method for the measurement of the units or urobilin and urobilinogen in duodenal content Schneider says, for the purpose of differential diagnosis has gratifying value

Surgery, Gynecology and Obstetrics, Chicago

June 1921 **32** No 6

Reconstruction Operation for Ununited Fracture of Neck of Femur R Whitman New York —p 479
Postoperative Massive Collapse of Lung F A C Scrimger Montreal —p 486
*Cauterization of Adhesions in Pneumothorax Treatment of Tuberculosis H C Jacobaeus Stockholm Sweden —p 493
*Focal Infections with Metastatic Manifestations J H Cunningham Boston —p 501
Present Status of Treatment of Operable Cancer of Cervix W P Graves Boston —p 504
Present Position of Radium in Treatment of Uterine Cancer W S Stone New York —p 509
*Sequels and Later Aspect of Toxic Albuminurias of Pregnancy H K Gibson Chicago —p 513
Nasopharyngeal Endothelioma L Eloesser and J M Read San Francisco —p 519
Angioma of Placenta Report of Case J T Wilhams Boston —p 523
*Analysis of Results of Treatment of Fractures of Femoral Diaphysis in Children Under Twelve Years of Age K Speed Chicago —p 527
Influence of Syphilis on Pregnant Woman G Gellhorn St Louis —p 535
Recurrent Gastric Perforations C K P Henry Montreal —p 542
Cancer of Ampulla of Vater R M Lewis Baltimore —p 543
Importance of Thorough Exploration of Intra Abdominal Organs in Operations for Epigastric Hernia R Lewisohn New York —p 546
Clinical Study of Placenta J E Talbot Worcester Mass —p 552
*Treatment of Prolapse of Urethra G R Livermore Memphis Tenn —p 557
Thread Retaining Needle D S Allen St Louis —p 558
Surgical Postoperative Treatment R V B Shier Toronto —p 559

Cauterization of Adhesions in Pneumothorax Treatment of Tuberculosis—At the International Medical Congress in London in 1913 Jacobaeus gave an account of the first attempt to cauterize string or membrane-like adhesions, which prevent the complete collapse of the lung in the pneumothorax treatment of pulmonary tuberculosis The operation was performed through only two punctures, without a wide opening of the chest wall Guided by the thoracoscope the operator locates the adhesions in question and cauterizes them by the glowing wire In summarizing the date in the forty cases in which operation was performed it is seen that in thirty the purpose of the operation was attained Complete or sufficient compression of the lung was obtained in twenty-seven of thirty-seven cases of adhesions to the apex and the lateral chest wall The aim of operation was attained in all three cases of adhesion to the diaphragm, but in only one was a corresponding practical and valuable result gained From these thirty cases four must be deducted in which operation was followed by a complicating serous pleurisy of tuberculous empyema with serious consequences to the patients In twenty-six of forty cases, therefore, a satisfactory pneumothorax was obtained and the operation was of genuine benefit The early convalescence was favorable in all cases except in the five mentioned, later on, however, it was highly variable depending on other factors especially on the condition of the other lung The statistics of the immediate effect of the operation justify the operation as an adjunct in the pneumothorax treatment of pulmonary tuberculosis The string-like and membrane-like adhesions are the best subjects for the operation Surface adhesions also are adapted for cauterization to a certain extent

Focal Infections in Genital Organs as Cause of Arthritis—Cunningham urges that the possibility of foci of infection in the deep genital structures be included in the differential diagnosis of infectious arthritis

Toxic Albuminuria of Pregnancy—Gibson expresses the conviction that freedom from albuminuria with a normal arterial tension following a toxic albuminuria in the course of one pregnancy is by no means a sure criterion of its non-occurrence in a subsequent one As to the wisdom or expediency of a subsequent pregnancy in this group of affections one may say possibly it may be permitted after a protracted interval of normal arterial tension and freedom from any evidence of renal incapacity and after due consideration to the three outstanding hazards—first, irreparable damage to kidney and heart, second, prematurity, third, eclampsia Gibson finds no justification for placing the woman in jeopardy a second time, for although the etiology and nature of eclampsia are obscure, the mortality and morbidity are by no means so There is no statue of limitations for the kidney of pregnancy

Nasopharyngeal Endothelioma—Eloesser and Read urge that patients with endothelioma of the nasal passages be observed over a longer period than has been customary, that they be examined completely and thoroughly at regular intervals not by rhinologists alone but also by internists or general surgeons and that necropsies performed on those who die while under observation be undertaken with a view to discovering distant metastases One of their patients died of metastases five years after operation

Treatment of Fracture of Femoral Diaphysis in Children—If a proper Balkan frame and suspension splint traction are used for femoral shaft fractures in children over 4 or 5 years of age, Speed says their advantages will be appreciated There is constant study and efficient traction in the axis required against contracting muscles There is no pain if the skin surface does not become cut and infected and a traction weight proportionate to the child's body weight is used The patient has bed freedom to amuse himself to use the bed pan and to permit nursing attention A maximum length and good axial alignment can be obtained by this method if care is given to watching details Splints permitting knee movements during traction can be used Most children do not need them They recover quickly from any knee stiffness acquired during the four weeks of traction The usual result is much better than a result obtained by any other nonoperative method

Cancer of Ampulla of Vater—Lewis reviews the history of a patient who returned to the clinic for observation eight and one-half years after a successful radical extirpation of a cancer of the ampulla of Vater by Dr Howard A Kelly and Dr Curtis F Burnam

Electrotherapy of Prolapse of Urethra—Livermore used the monopolar current with most gratifying results in one case he reports

Tennessee State Medical Ass'n Journal, Nashville

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Initial Lesion and Its Diagnosis T R Barry Knoxville—p 3
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Laboratory Diagnosis of Syphilis R C Derrvaux Nashville—p 8
Tubercular Peritonitis J B Haskins Chattanooga—p 17

Virginia Medical Monthly, Richmond

June 1921 **48** No 3

Fever in Infancy C G Grulee Chicago—p 115
Injuries to Bile Tract in Cholecystectomy W H Goodwin University—p 127
Surgical Treatment of Diseases of Gallbladder D P Peters Lynchburg—p 132
Demography W A Plecker Richmond—p 137
Acute Pyelitis A I Dodson Richmond—p 140
Optic Nerve in Its Relation to Posterior Nasal Sinuses J Bordley Baltimore—p 144
Surgical Procedures in Fractures of Elbow J G Omelvena Hamptom Roads—p 147
Some Points Well to Consider in Preliminary and Postoperative Treatment of Prostate Cases A S Brinkley Richmond—p 149
Associated Nervous Manifestations and Psychoses in Obstetrics J Bear Richmond—p 151
Effects of Radium and Roentgen Ray on Cancer Especially Skin Lesions of Disease C A Simpson Washington D C—p 155
Atypical Mastoiditis with Report of Three Cases E Gill, Roanoke—p 156
Goiter Operations W F Grigg Richmond—p 158
*Case of General Infection Due to Colon Bacillus B A. Pope Newsoms—p 160

Colon Bacillus Septicemia—Pope reports a case of septicemia due to the colon bacillus The patient, aged 10 complained of general malaise slight fever, diarrhea pain in the back above the waist line and in the intestines in the region of the umbilicus There are six children in the family, ages ranging from 3 to 18 years, and all save one boy about 18 were taken down one after another ranging over a period of about three weeks In none of these other cases was the blood culture confirmed although they all had similar symptoms The general treatment was a carbohydrate diet sulphocarbolates and potassium citrate by mouth, with mercuric chlorid intravenously When the mercury was given early in the disease, its duration was shorted

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Dublin Journal of Medical Science

May 1921 Ser 4 No 15

*Case of Plasmocytoma Associated with Bence Jones Protein J Speares—p 193
Acid and Alkalies W Fearon—p 201
Some Impressions of the French School of Medicine L Abrahamson—p 208
*Herpes as a Type of Vicarious Menstruation B Solomons—p 217

Plasmocytoma Associated with Bence-Jones Protein—The remarkable features of Speares' case are Association of Bence Jones proteinuria with widespread bone-marrow trouble presence of skin tumors or deposits, swollen tongue, progressive weakness, anemia, painful pressure and consistent milky appearance of the urine Nearly all the bones examined showed masses of tumor These were almost entirely composed of separate cells The stroma was extremely slight consisting of a few delicate fibrous threads The tumor cells were for the most part medium-sized cells of irregular shape The protoplasm was spongy, full of small round unstained spaces The nuclei were oval or round, sharply marked off by a staining border, the chromatin of the nucleus was usually arranged in three or four masses round this border, and in the center of the cell was a small, round nucleolus which took on acid stains, and with any stain showed a slightly different tone from that of the chromatin This class of myeloma has been called a plasmocytoma The most noticeable feature in this case from the histological point of view outside the multiple bone tumors was the presence of a widespread degeneration affecting the blood vessels both arteries and veins and also connective tissue especially fat tissue, and that between the bundles of muscle fibers The substance is like amyloid in appearance, but does not give the amyloid reactions It is present in the vessels of all parts examined even in the tumor itself It was most marked in the vessels of the tongue, the muscles of the neck the mesenteric vessels and in fat tissue, but it was also present in the kidney spleen heart, and to a less extent in the lymphatic glands Along with this there is a form of coagulation necrosis present in the muscles of the parts affected and in fat tissue a thickening of the capsule of the fat globule which gave a peculiar granular or gritty feel to the fat at the postmortem Speares calls it a form of hyaline

Herpes as Type of Vicarious Menstruation—A woman aged 27 complained of getting a sore on her left cheek every month, as a catarrhal herpes it remained for about a week. When it is present she gets the sensations which some women feel previous to menstruation This herpetic eruption commenced when she was 18 and had appeared monthly ever since Absence of the uterus tubes and ovaries was diagnosed

Glasgow Medical Journal

May, 1921 **13** No 5

*Examination of Blood in Cases of Cancer of Breast in Regard to Operation and Prognosis E D Anderson—p 321
Defects in Cardiac Rhythm in Relation to Cardiac Failure G A Allan—p 333
Cookery and Digestion J Adam—p 351

Blood Examination in Cancer as Aid in Prognosis—In addition to breast cases cases of cancer of the uterus, lip tongue and stomach, which were diagnosed clinically before operation were also examined by Anderson Of thirty cases examined twenty-one were seen before operation The average leukocyte count of these cases was 8,962 per c mm and the average of the first count after operation in twenty cases (one being inoperable) was 7 410 per c mm Eleven of the twenty-one patients had a leukocyte count of over 10,000 per c mm. before operation The highest leukocyte figure obtained in the thirty cases was 14,400 one week after operation A fortnight later the leukocytes had fallen to 7,800 per c mm Five months later they numbered 9 800 per c mm The changes in the number and appearance of the red cells were not very outstanding The hemoglobin figure ranged from 40 per cent to 75 per cent The color index figure

showed little change after operation In none of the innocent cases was there a leukocyte count of over 10,000 either before or after operation

Journal of Tropical Medicine and Hygiene, London

May 2 1921 24, No 9

Keratosis Pilaris of Jackson and Brocq in Anglo Egyptian Sudan A J Chalmers and J Gibbon —p 121
Monilia Metalondinensis (Castellani 1916) and Epidermophyton Rubrum (Castellani 1909) F C Spurr —p 126

Medical Journal of South Africa, Johannesburg

February 1921 16, No 7

Relation Between Delinquency and Mental Abnormality J M Moll —p 125
Problem of Venereal Disease J A Mitchell —p 128
Prognosis of Heart Disease G D Maynard —p 131
Mosquito Apparatus for Obtaining a Blood Sample by Venipuncture —p 133

Tubercle, London

May 1921 2 No 8

*Blood Pressure in Pulmonary Tuberculosis A G M Grant —p 337
Tuberculosis in a Welsh Country Parish R C Hutchinson —p 345
*Striae Distensae in Skin of Consumptives K Hammer —p 349

Blood Pressure in Pulmonary Tuberculosis—Grant's findings in 140 patients show a higher systolic level in all stages than that recorded by Pottenger but with the characteristic decline in pressure as the disease advances The diastolic pressure is also somewhat lowered although not to such a degree but in many cases the fall is marked—60 mm Hg being a frequent reading The minimum pressure represents the peripheral resistance which is chiefly a measure of vascular tone With vasodilatation the diastolic pressure falls and this lack of vascular tone manifests itself clinically in the blueness of the dependent hands so frequently noticed The beneficial effect of rest in bed in cases of activity can be demonstrated by the increase in pressure An intelligent use of blood pressure helps as a guide in the control of exercise in the treatment of phthisis The effect of exercise on the diastolic pressure is indefinite With the rise in the systolic pressure, there generally occurs a small rise in the diastolic pressure, but the small variations and the difficulty of exactly defining the minimum level in some cases make data less accurate than with systolic readings A rise in systolic pressure maintained over a considerable time is evidence of definite improvement while an appreciable fall implies advancing disease the rapidity of the fall corresponding with the activity of the disease When numerous observations are made at frequent intervals fluctuations in the blood pressure are noticed from time to time but the general trend in advancing disease is downward The diastolic pressure is less affected than the systolic and its variations less reliable If the systolic pressure is low viz 90-100 mm Hg the outlook seems to be better when the diastolic pressure shows a corresponding decline but if it registers in such cases between 70 80 mm Hg making a pulse pressure of about 20 mm Hg, the chances of improvement are not so promising These patients are the subjects of weakly acting hearts, they are fragile, lack vitality and do not respond well to treatment

Striae Distensae in Skin of Consumptives—The occurrence of striae in pulmonary tuberculosis seems to be very rare, or at least, little observed Among 5 800 patients Hammer has found twelve who according to the records, exhibited striae In these cases the gain of weight was so great and so constant that it may be regarded as an essential factor in the causation of the striae Their appearance in places where accumulations of fat are most prominent, i e, the hips, loins and shoulders further supports this view There was nothing to suggest that they could be associated with any compensatory dilatation of the healthier side of the chest for they never occurred on the thorax itself and their distribution could not in any way be correlated with the site of the diseases In most cases the disease had lasted only a short time and there had been little or no fever to indicate marked toxemia Any appreciable reduction of the vitality and nutrition of the skin by toxic influences can therefore, be excluded The marked gain of weight in itself suggests that the toxins of the disease cannot have affected these patients greatly

Archives des Maladies du Cœur, etc, Paris

April 1921 14 No 4

*Leukolytic Serotherapy G Lindstroem —p 145
*Acute Leukemia J Kaltenbach —p 156
Pure Myelogenous Lymphoid Leukemia T Reh —p 167

Leukolytic Serotherapy—Lindstroem describes experiments on rabbits and cats with leukolytic serums obtained from sheep immunized by intravenous injection of rabbit leukocytes The results encouraged the application of this form of serotherapy in a woman of 40 with myeloid leukemia and in a man of 30 with subacute leukemia The leukocytes which had numbered 180,000 ran up at first and then dropped to 3 000 and the spleen could no longer be palpated and the patient said she felt as well as before her sickness An intramuscular injection of 5 c c. of the serum had been given and a second of 10 c c Four months later the leukocytes began to climb again and the spleen to enlarge, and roentgen exposures were made, the patient refusing further serotherapy The condition continued stationary for two months, but then fatal aggravation followed One injection of the serum was given the second patient and the leukocytes dropped from 92 000 to 12,000, the temperature becoming normal at the same time The symptoms returned again in about three months and proved fatal In a third case the effect of the serum was not so manifest although the spleen grew smaller A fourth patient is still under treatment, the leukocyte figure dropped for a time but then ran up again

Acute Leukemia—In the case described in a laboring man of 50 edema of the glottis and ulceration on the epiglottis were probably responsible for the sudden death What had seemed to be pleurisy with effusion was probably a manifestation of the hemorrhagic diathesis A third feature of the case was the numerous and extensive ulcers found in the bowel although no blood had been discovered in the stools except with chemical tests

Bulletin Medical, Paris

May 21 1921 35 No 21

Diphtheria Associated with Other Infections C Achard —p 421

Bulletins de la Societe Medicale des Hôpitaux, Paris

May 13 1921 45 No 16

Treatment of Garlic in Treatment of Pulmonary Gangrene Loeper Jeanneney and Hurrier —p 667
Diabetic Gangrene E de Massary and J Girard —p 670
Clinical Meals in Therapeutics H Roger —p 675
*Parkinsonian Syndrome with Epidemic Encephalitis G Guillain and C Gardin —p 676
Ulcer of the Esophagus De Lavergne —p 681
Fasting in Treatment of Diabetes M Labbe —p 684
Gonococcus Septicemia Weill and Colaneri —p 695
Early Serum Sickness Lafforgue —p 699
Laboratory Contagion with Malta Fever J Meyer —p 701
The Arteries in the Legs in Diabetes J Heitz —p 706
Hodgkin Disease Involving the Mediastinum L Ribadeau Dumas —p 711
*Residual Nitrogen with Uremia Brouardel and J Renard —p 717
The Salivary Glands in Epidemic Encephalitis Netter Cesari and H Durand —p 721
Nephritis in Gastro Intestinal Disease Nathan —p 724

Diabetic Gangrene—Massary and Girard describe a case in which the gangrene had evidently developed on the basis of syphilitic changes in the blood vessels In two other cases the gangrene was the result of infection of a trophic ulceration on the foot

Parkinsonian Syndrome with Epidemic Encephalitis—Guillain and Gardin call attention to the high pressure and catatonia with glycosuria in the young man following an attack of epidemic encephalitis The glycosuria has persisted during the few months to date

Fasting in Diabetes—Labbe tabulates the details in a few cases to sustain his statements in regard to the different effect of fasting in treatment of diabetes according as the diabetes is or is not of the emaciation type It gives the best results in the graver cases of diabetes without denutrition When there is denutrition the fasting exaggerates it and the benefit is only transient None of the symptoms permanently subside although all may show transient improvement The principle is like that of Guelpa's tapping plus repeated purges, kept up for three days This method

Nasopharyngeal Endothelioma—Eloesser and Read urge that patients with endothelioma of the nasal passages be observed over a longer period than has been customary, that they be examined completely and thoroughly at regular intervals not by rhinologists alone, but also by internists or general surgeons and that necropsies performed on those who die while under observation be undertaken with a view to discovering distant metastases One of their patients died of metastases five years after operation

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Virginia Medical Monthly, Richmond

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Some Impressions of the French School of Medicine L Abrahamson—p 208
Herpes as a Type of Vicarious Menstruation B Solomons—p 217

Plasmocytoma Associated with Bence-Jones Protein—The remarkable features of Speares' case are Association of Bence Jones proteinuria with widespread bone-marrow trouble presence of skin tumors or deposits, swollen tongue, progressive weakness, anemia, painful pressure and consistent milky appearance of the urine Nearly all the bones examined showed masses of tumor These were almost entirely composed of separate cells The stroma was extremely slight consisting of a few delicate fibrous threads The tumor cells were for the most part medium-sized cells of irregular shape The protoplasm was spongy, full of small round unstained spaces The nuclei were oval or round sharply marked off by a staining border, the chromatin of the nucleus was usually arranged in three or four masses round this border and in the center of the cell was a small round nucleolus which took on acid stains, and with any stain showed a slightly different tone from that of the chromatin This class of myeloma has been called a plasmocytoma The most noticeable feature in this case from the histological point of view outside the multiple bone tumors was the presence of a widespread degeneration affecting the blood vessels both arteries and veins and also connective tissue especially fat tissue, and that between the bundles of muscle fibers The substance is like amyloid in appearance, but does not give the amyloid reactions It is present in the vessels of all parts examined even in the tumor itself It was not marked in the vessels of the tongue, the muscles of the neck the mesenteric vessels and in fat tissue, but it was also present in the kidney spleen heart, and to a less extent in the lymphatic glands Along with this there is a form of coagulation necrosis present in the muscles of the parts affected and in fat tissue a thickening of the capsule of the fat globule which gave a peculiar granular or gritty feel to the fat at the postmortem Speares calls it a form of hyalin

Herpes as Type of Vicarious Menstruation—A woman aged 27 complained of getting a sore on her left cheek every month, as a catarrhal herpes it remained for about a week When it is present she gets the sensations which some women feel previous to menstruation This herpetic eruption commenced when she was 18 and had appeared monthly ever since Absence of the uterus tubes and ovaries was diagnosed

Glasgow Medical Journal

May 1921 **13** No 5

*Examination of Blood in Cases of Cancer of Breast in Regard to Operation and Prognosis E D Anderson—p 321
Defects in Cardiac Rhythm in Relation to Cardiac Failure G A Allan—p 333
Cookery and Digestion J Adam—p 351

Blood Examination in Cancer as Aid in Prognosis—In addition to breast cases cases of cancer of the uterus lip tongue and stomach which were diagnosed clinically before operation, were also examined by Anderson Of thirty cases examined twenty-one were seen before operation The average leukocyte count of these cases was 8,962 per c mm, and the average of the first count after operation in twenty cases (one being inoperable) was 7410 per c mm Eleven of the twenty-one patients had a leukocyte count of over 10,000 per c mm before operation The highest leukocyte figure obtained in the thirty cases was 14 400 one week after operation A fortnight later the leukocytes had fallen to 7,800 per c mm Five months later they numbered 9 800 per c mm The changes in the number and appearance of the red cells were not very outstanding The hemoglobin figure ranged from 40 per cent to 75 per cent The color index figure

showed little change after operation In none of the innocent cases was there a leukocyte count of over 10,000 either before or after operation

Journal of Tropical Medicine and Hygiene, London

May 2 1921 **24**, No 9

Keratosis Pilaris of Jackson and Brocq in Anglo Egyptian Sudan A J Chalmers and F Gibbon —p 121
Wenyon Metalondinensis (Castellani, 1916) and Epidermophyton Rubrum (Castellani 1909) E C Spaar —p 126

Medical Journal of South Africa, Johannesburg

February, 1921 **16**, No 7

Relation Between Delinquency and Mental Abnormality J M Moll —p 125
Problem of Venereal Disease J A Mitchell —p 128
Prognosis of Heart Disease G D Maynard —p 131
Mosquito Apparatus for Obtaining a Blood Sample by Venipuncture —p 133

Tubercle, London

May 1921 **2** No 8

*Blood Pressure in Pulmonary Tuberculosis A G M Grant —p 337
Tuberculosis in a Welsh Country Parish R C Hutchinson —p 345
*Striae Distensae in Skin of Consumptives K Hammer —p 349

Blood Pressure in Pulmonary Tuberculosis—Grant's findings in 140 patients show a higher systolic level in all stages than that recorded by Pottenger, but with the characteristic decline in pressure as the disease advances The diastolic pressure is also somewhat lowered, although not to such a degree, but in many cases the fall is marked—60 mm Hg being a frequent reading The minimum pressure represents the peripheral resistance which is chiefly a measure of vascular tone With vasodilatation the diastolic pressure falls and this lack of vascular tone manifests itself clinically in the blueness of the dependent hands so frequently noticed The beneficial effect of rest in bed in cases of activity can be demonstrated by the increase in pressure An intelligent use of blood pressure helps as a guide in the control of exercise in the treatment of phthisis The effect of exercise on the diastolic pressure is indefinite With the rise in the systolic pressure, there generally occurs a small rise in the diastolic pressure, but the small variations and the difficulty of exactly defining the minimum level in some cases make data less accurate than with systolic readings A rise in systolic pressure maintained over a considerable time is evidence of definite improvement, while an appreciable fall implies advancing disease the rapidity of the fall corresponding with the activity of the disease When numerous observations are made at frequent intervals, fluctuations in the blood pressure are noticed from time to time but the general trend in advancing disease is downward The diastolic pressure is less affected than the systolic and its variations less reliable If the systolic pressure is low, viz, 90-100 mm Hg, the outlook seems to be better when the diastolic pressure shows a corresponding decline but if it registers in such cases between 70-80 mm Hg making a pulse pressure of about 20 mm Hg, the chances of improvement are not so promising These patients are the subjects of weakly acting hearts, they are fragile, lack vitality and do not respond well to treatment

Striae Distensae in Skin of Consumptives—The occurrence of striae in pulmonary tuberculosis seems to be very rare, or at least, little observed Among 5 800 patients, Hammer has found twelve who according to the records, exhibited striae In these cases the gain of weight was so great and so constant that it may be regarded as an essential factor in the causation of the striae Their appearance in places where accumulations of fat are most prominent, i e, the hips, loins and shoulders further supports this view There was nothing to suggest that they could be associated with any compensatory dilatation of the healthier side of the chest for they never occurred on the thorax itself, and their distribution could not in any way be correlated with the site of the diseases In most cases the disease had lasted only a short time, and there had been little or no fever to indicate marked toxemia Any appreciable reduction of the vitality and nutrition of the skin by toxic influences can therefore, be excluded The marked gain of weight in itself suggests that the toxins of the disease cannot have affected these patients greatly

Archives des Maladies du Cœur, etc, Paris

April 1921 **14**, No 4

*Leukolytic Serotherapy G Lindstroem —p 145
*Acute Leukemia J Kaltenbach —p 156
Pure Myelogenous Lymphoid Leukemia T Reh —p 167

Leukolytic Serotherapy—Lindstroem describes experiments on rabbits and cats with leukolytic serums obtained from sheep immunized by intravenous injection of rabbit leukocytes The results encouraged the application of this form of serotherapy in a woman of 40 with myeloid leukemia and in a man of 30 with subacute leukemia The leukocytes which had numbered 180 000, ran up at first and then dropped to 3 000 and the spleen could no longer be palpated and the patient said she felt as well as before her sickness An intramuscular injection of 5 c c of the serum had been given and a second of 10 c c Four months later the leukocytes began to climb again and the spleen to enlarge, and roentgen exposures were made the patient refusing further serotherapy The condition continued stationary for two months but then fatal aggravation followed One injection of the serum was given the second patient and the leukocytes dropped from 92 000 to 12,000, the temperature becoming normal at the same time The symptoms returned again in about three months and proved fatal In a third case the effect of the serum was not so manifest although the spleen grew smaller A fourth patient is still under treatment, the leukocyte figure dropped for a time but then ran up again

Acute Leukemia—In the case described in a laboring man of 30 edema of the glottis and ulceration on the epiglottis were probably responsible for the sudden death What had seemed to be pleurisy with effusion was probably a manifestation of the hemorrhagic diathesis A third feature of the case was the numerous and extensive ulcers found in the bowel although no blood had been discovered in the stools except with chemical tests

Bulletin Medical, Paris

May 21 1921 **35** No 21

Diphtheria Associated with Other Infections C Achard —p 421

Bulletins de la Societe Medicale des Hôpitaux, Paris

May 13 1921 **45** No 16

Tincture of Garlic in Treatment of Pulmonary Gangrene Loeper Lorcher and Hurrier —p 667
*Diabetic Gangrene E de Massary and J Girard —p 670
Colloidal Metals in Therapeutics H Roger —p 673
*Parkinsonian Syndrome with Epidemic Encephalitis G Guillain and C Gardin —p 676
Ulcer of the Esophagus De Lavergne —p 681
*Fasting in Treatment of Diabetes M Labbe —p 684
Gonococcus Septicemia Weill and Colaneri —p 695
*Tardy Serum Sickness Lafforgue —p 699
Laboratory Contagion with Malta Fever J Meyer —p 701
*The Arteries in the Legs in Diabetes J Heitz —p 706
Hodgkin's Disease Involving the Mediastinum L Ribadeau Dumas —p 711
*Residual Nitrogen with Uremia Brouardel and J Renard —p 717
*The Salivary Glands in Epidemic Encephalitis Netter Cesari and H Durand —p 721
*Nephritis in Gastro Intestinal Disease Nathan —p 724

Diabetic Gangrene—Massary and Girard describe a case in which the gangrene had evidently developed on the basis of syphilitic changes in the blood vessels In two other cases the gangrene was the result of infection of a trophic ulceration on the foot

Parkinsonian Syndrome with Epidemic Encephalitis—Guillain and Gardin call attention to the high pressure and catatonia with glycosuria in the young man following an attack of epidemic encephalitis The glycosuria has persisted during the few months to date

Fasting in Diabetes—Labbe tabulates the details in a few cases to sustain his statements in regard to the different effect of fasting in treatment of diabetes according as the diabetes is or is not of the emaciation type It gives the best results in the graver cases of diabetes without denutrition When there is denutrition the fasting exaggerates it and the benefit is only transient None of the symptoms permanently subside although all may show transient improvement The principle is like that of Guelpa's fasting plus repeated purges, kept up for three days This method

dates from 1910 and has aroused much opposition among clinicians

Tardy Serum Sickness—Lafforgue describes the case of a young man treated vigorously with antimeningococcus serum for severe epidemic meningitis As the latter subsided the pulse grew very weak and the pressure very low, with extreme tachycardia and asthenia He gave suprarenal treatment, assuming that this was a tardy manifestation of serum sickness, and prompt recovery followed

The Arteries in the Legs in Diabetes—Heitz has been testing the blood pressure and pulsation in the various arteries of fifty-three diabetics He found that the pulse wave was very much weaker below the knee than in the thigh and arm He ascribes this to a specific obstruction to the permeability of the arteries in the leg before it becomes apparent in any other way This warns to give alkalies and treatment with physical agents, etc to ward off the grave consequences of obliteration of the arteries in the diabetic Thirty of the total number were private patients and in these the blood pressure was always abnormally high in comparison to the hospital patients

The Residual Nitrogen with Fatal Uremia—Brouardel and Renard report a case of fatal uremia in a man of 69 with chronic kidney disease but the residual nitrogen was never over 0 80 gm

Salivary Glands in Epidemic Encephalitis—The participation of the salivary glands in the clinical picture of epidemic encephalitis is being noted more and more, and this communication describes several cases with necropsy findings in some, and the proof of the virulence of the salivary glands by injection of guinea-pigs and rabbits

Nephritis and Digestive Disorder—Nathan tabulates some data which show that latent chronic kidney disease is common with chronic digestive disturbance It may obscure the clinical picture and explain the lack of success of the treatment directed solely against the digestive disturbance

Journal de Médecine de Bordeaux

May 10 1921, **92**, No 9

Recurrence of Scarlet Fever J Vergely—p 243
Paratyphoid Pleurisy H Mallie—p 245
Orthopedic Medical Inspection of Schools J Doche—p 247
Surgical Treatment of Gastric Ulcer G Chavannaz—p 251
Compulsory Health Insurance H Vencer—p 254
Radium and Radium Therapy J Bergonie—p 255

Journal d'Urologie, Paris

March, 1921 **11** No 3

*Accessory Urethral Passages Oudard and G Jean—p 177
*Calculi in Kidney Pelvis E Christian—p 203
Calculus in the Bladder Simulating a Papilloma J Reynard—p 211

Accessory Urethral Passages—Oudard and Jean theorize to explain the origin of congenital accessory passages communicating with the urethra, and summarize fifteen cases from the literature and three from their own experience Several different types are encountered and the differential diagnosis is very important If operative measures are required it seems wisest to remove the accessory passage completely In their three operative cases there was no infection although gonorrhea was present If the gonococcus infection extends to one of these blind passages, the best treatment seems to be to open up the passage to make it form part of the urethra, instead of a pocket

Calculi in Kidney Pelvis—Christian advocates a right-angled incision in the kidney pelvis, his illustrations showing the ample access this affords and the ease with which the incision can be closed and healed It prevents any danger of hemorrhage and does not interfere with the functioning of the kidney, while it allows the extraction of large and faceted calculi

Lyon Medical, Lyons

May 25 1921 **130**, No 10

*The Axilla in Pleuropulmonary Disease G Mouriquand—p 429
History of the Rubber Nipple A Mollière—p 467

The Axilla in the Diagnosis of Pulmonary Disease—Mouriquand urges that the axilla should be minutely examined with auscultation whenever pneumonia is suspected in a child or adult The symptoms at first are often exclusively in the axilla Sometimes auscultation of the axilla will reveal a tuberculous focus that escapes detection by other means Percussion of the axilla may differentiate between a pulmonary process at the base and a pleural process A moderate effusion in the pleural cavity often tends to settle in the axilla the dullness being more prominent here than in front or back Discovery in the axilla of dullness due to "axillarization" of a pleurisy of the large cavity or to pure axillary pleurisy or to interlobar pleurisy with axillary predominance—all call for an exploratory puncture in the axilla, which may reveal pus here when puncture elsewhere is negative This permits treatment which may prove life saving He discusses the whole field of axillary semeiology which often leads to discovery of purulent pleurisy otherwise escaping detection

Medecine, Paris

January 1921 **2**, No 4 Second Part

Otorhinolaryngology in France in 1920 L Baldenweck—p 290
*The Larynx in Tabes M Lannois—p 297
Tuberculosis of the Tonsil H Bourgeois—p 302
Mastoid Operations with Chronic Otitis V Texier—p 307
Cancer of the Maxillary Sinus A Hautant—p 309
Correction of Deformed Nose H Aboulker—p 313
Treatment of Paradental Cysts L Bremond—p 315
*Foreign Bodies in the Ear G Liebault—p 319
Radium Treatment of Cancer of the Esophagus L Dufourmentel—p 321
Total Tonsillectomy Ramadier—p 325
Adhesion of the Palate and Pharynx J Rouget—p 327
Treatment of Ozena J Tarneaud—p 328

Larynx in Tabes—Lannois urges the extreme importance of detecting the tabetic origin of disturbance in the larynx, and describes the clinical pictures it is liable to present The disturbances may be of a sensory nature or more in the line of spasm or paralysis Laryngeal disturbance with tabes is always grave With bilateral paralysis, recurring spasm may compel tracheotomy The spasm may recur even after resection of the vocal cords The only effectual treatment is that of the underlying syphilis

Foreign Bodies in the Ear—Liebault warns that blind attempts at extraction may do irreparable harm Living parasites should be killed with chloroform or ether or tepid oil, and grains may be modified by instillation of fluid Instillation of glycerin is always useful and lavage of the ear should always be given a trial General anesthesia may be necessary for children, and for all patients if the foreign body has to be extracted through an incision back of the ear

Paris Médical

May 21 1921 **11** No 21

Wounds of the Wrist A Martin—p 405
*Variations in Leukocyte Count in the Normal P Mauriac and P Cabouat—p 407
*Signs of Epidemic Encephalitis P Sainton and P Cornet—p 408
System in Physical Education M Boigey—p 409
Physiotherapy in Uterine Hemorrhage Foveau de Courmelles—p 413

Variations in Leukocyte Count in the Normal—Mauriac and Cabouat found a surprising range of fluctuations in the leukocyte count at different fifteen minute intervals during the day In one half hour in one subject the count varied from 12,300 to 6 500 They warn that instead of a digestion leukocytosis it would be better to speak of the digestive fluctuation of the leukocyte count These abrupt changes in the leukocyte count in normal conditions warn to be reserved in attributing a specific character to them

Signs of Epidemic Encephalitis—Sainton and Cornet have found it possible to elicit myoclonus in dubious cases by flexing the hand or arm or tapping certain muscles Another sign is what they call the frontal sign When the upper eyelid is raised, the frontal muscle contracts very slowly In exophthalmic goiter it does not contract at all, and in seven patients with epidemic encephalitis this asynergy in the movements of the upper lid and the frontal muscle was pronounced

Presse Médicale, Paris

May 18 1921 **29**, No 40

*Revision of Unfit for Military Duty E Rist—p 393
*The Apex Beat Reclining on Left Side C Lian—p 395

The Board of Revision—Rist describes the work done by the council which has been reexamining the 3,407 men in one

province who had been exempted between 1896 and 1914 from military service A total of 608 had been exempted on account of tuberculosis, but the revision showed that 68 8 per cent were free from any signs of old or recent tuberculosis Only 110 of the 483 exempted for "weakness" were found unfit for regular or light service Among the 144 exempted for hernia sixteen had no trace of a hernia although diligently wearing a truss Among those exempted for deafness, hearing was restored in five by removal of cerumen

The Apex Beat—Lian expatiates on the advantages of investigating the region of the apex with the subject reclining on his left side The stethoscope findings then are particularly instructive with mitral stenosis, and in the diagnosis of systolic murmurs at the apex

May 21 1921, **29**, No 41

*Sulphur in Dermatology L M Pautrier—p 401
*Treatment of P eudarthrosis L Imbert—p 403
Visual Disturbances from Alcohol and Tobacco A Terson—p 404
*Speed of Sedimentation of Erythrocytes P Pagniez—p 405

Sulphur in Dermatology—Pautrier reports striking results in treatment of alopecia and psoriasis after intramuscular injection of 1 or 2 c c of a 5 per cent oil solution of sulphur He adds cholesterin to the oil as this increases the absorbing power, his formula being 8 parts sulphur to 80 parts of the cholesterinized oil and 20 parts eucalyptol The injections are repeated twice a week He comments on the losses of sulphur in certain cases of alopecia This sulphur treatment acts on the papilla In one case the hairs grew again after total rebellious baldness Cod liver oil or the oil from horse kidneys has special advantages in this formula The proportion of cholesterin is not stated

Serum Treatment of Pseudarthrosis—Imbert has been injecting 5 c c of serum once or twice a week in persons whose fractures refuse to heal, taking the serum from convalescents with well-healed fractures The results are most encouraging

Visual Disturbance from Abuse of Alcohol or Tobacco—Terson explains that in these cases the vision is better toward evening that is, when the light is less bright There is also central scotoma and color blindness for small patches of color The subject can distinguish a red or green card but is unable to tell the color of a scrap cut from such a card Medical treatment can be relied on to cure or at least to improve even in very advanced cases This impairment of vision may accompany tabes or other disease but yields promptly to abstention from the alcohol or tobacco or both

Biologic Import of Sedimentation of Erythrocytes—Pagniez reviews the testimony that has been accumulated in regard to the especially rapid sedimentation of erythrocytes in the pregnant This is interesting in connection with recent research by Lumiere and Couturier which has shown that certain guinea-pigs fail to respond to experimental anaphylaxis This abnormal resistance was found only in gravid females None of the phenomena of anaphylactic shock could be induced in these gravid females, confirming that gestation confers a kind of stability on the colloids of the plasma which protects them against the colloidoclasis shock

Progrès Medical, Paris

May 7 1921 **36** No 19

*Diagnosis of Traumatic Shock J Guyot and G Jeanneney—p 199
Pep in in Pneumogastric Nerve M Loeper et al—p 204
Gynecologic Aspect of Industrial Accidents Dalche—p 204

Diagnosis of Traumatic Shock—Guyot and Jeanneney describe the nervous, the hemorrhagic, the toxemic, the toxi-infectious and the mixed forms of traumatic shock, with the indications for treatment in each Low blood pressure, subnormal temperature and torpor may be encountered in a number of conditions that may be mistaken for shock Pain fatigue and chilling may induce a condition closely resembling shock, but the greatest chance for error is with acute peritoneal septicemia

May 14 1921 **36**, No 20

Principles of Vaccine Therapy Auburtin—p 211
*Gonococcus Vaccine Therapy A Sezary—p 212
*Vaccine Therapy in Otogenous Meningitis Lortat Jacob—p 215
Vaccine Therapy for Suppurative Processes R Dupont—p 216
Vaccine Therapy of Typhoid Fever Ranque and Senez—p 217

Gonococcus Vaccine Therapy—Sezary remarks that the dose must be the amount which induces just the mild febrile reaction which is indispensable for success This dose varies with different cases, and the effect can be most instructively studied with the complications of gonorrhea In nine of his 150 cases the orchitis or arthritis vanished the day after the first injection The vaccine has to be kept up, however, to prevent reinfection from the gonococci still lurking in the tissues A new dose should never be injected until twenty-four hours after the subsidence of the previous reaction Three days is usually enough of an interval He begins with 0 5 c c and follows with 1 up to 2 c c of the lipovaccine, not omitting the usual local measures

Vaccine Therapy in Otogenous Meningitis—The success was striking in two staphylococcus cases in two women recently delivered Jacob urges to use a stock vaccine without waiting for certainty or for mastoid involvement Lumbar puncture relieves and drains

Revue Franç de Gynecologie et d'Obstet, Paris

March 1921 **16**, No 3

*Transperitoneal Cesarean Section on the Lower Segment L Aubert—p 129
*Epidemic Encephalitis in the Pregnant M Vincent and E Gaujoux—p 147
Repeated Cesarean Section in a Dwarf A Grosse—p 163

Transperitoneal Cesarean Section on the Lower Segment—Aubert was much impressed with the advantages of the transperitoneal technic applied on the lower segment of the uterus in the four cases here described The danger of rupture later does not seem to be any greater, if so great as this segment of the uterus is less involved in the contraction and relaxation of the organ Even if rupture should occur, it seems less dangerous in this lower segment as it would be below the peritoneum and the drainage would be better If the operation should have to be supplemented by hysterectomy, this technic offers further advantages for this In his four cases the intestines did not show at all, he drew down a flap of the peritoneum and sutured it in a triangle over the sutured incision in the uterus

Epidemic Encephalitis in the Pregnant—Vincent and Gaujoux describe a case and summarize eleven others from the literature, and urge the importance of laboratory tests to eliminate other infectious processes They verify the diagnosis by the mild meningeal reaction or high sugar content of the spinal fluid which is so frequent in this disease The pregnancy in itself does not seem to render the prognosis graver

Schweizerische medizinische Wochenschrift, Basel

May 12 1921 **51**, No 19

*Action of Altitude on Sick Children E Feer—p 437
*Changes in Leukocytes in Infectious Diseases A Alder—p 440
*Perforation of Ulcer in Digestive Tract A Strauli—p 443
Indications for Albee's Operation in Spondylitis Debrunner—p 446

Mountain Climate for Sick Children—Feer says that the family physician is better able to judge of the effect of a stay in the mountains than the local physician He has made a special study on their return of children who have been sent to the mountain resorts in Switzerland and his conclusions are that a children's sanatorium offers much better chance for success than hotel or resort life in general The food is planned for children and the mental impressions are better for the child He has been impressed with the advantages of a change to the mountains during the winter The freedom from fogs, the sunlight, etc, are particularly useful for tuberculous children, the benefit is even greater than from a summer visit From six to twelve weeks is the advisable length of the sojourn except in cases of tuberculosis and asthma A three months' stay in the mountains in two successive years builds up the child better than a single six months' stay He advises that the children should not get too much milk but should be given cream, vegetables and fresh fruit freely He says that the mountain sunlight has an almost specific effect in the cure of rachitis The exudative diathesis is another indication for the mountains, especially for children with the doughy habitus and obstinate eczema Tuberculous bronchial gland disease is one of the

most important indications for the mountain climate He says that about 25 or 33 per cent of all city children over 6 years old may be regarded as having tuberculous disease of the bronchial glands in a healed or slumbering phase Such children thrive under out-of-door life in the mountains

Morphologic Changes in the Leukocytes in Infectious Diseases—Alder emphasizes the importance of changes in the protoplasm as well as in the nucleus as signs of the action of infectious disease on the leukocytes He gives a colored plate with thirty-one specimens showing typical changes, discussing their significance

Perforated Gastric Ulcer—Sträuli reports 17 cures in 29 operative cases, the mortality thus being 41 2 per cent None died in the cases in which the operation followed within six hours, 2 when the interval had been up to the twelfth hour, 4 between the twelfth and twenty-fourth hours, and all died of those operated on later than this One man of 67 had been brought to the hospital with the diagnosis of gallstone colic No history of stomach trouble was known, but inquiry of the family elicited a history of pains in the epigastrium for the last few months, then came the sudden unbearable pain with marked subsidence the fifth hour Sträuli diagnosed a perforated duodenal ulcer, and although twenty-one hours had elapsed prompt recovery followed the operation which revealed a perforated ulcer in the duodenum This case shows the power of resistance of the peritoneum which is possible in certain cases

Chirurgia degli Organi di Movimento, Bologna

April 1921 **5** No 2

*Tuberculosis of Vertebrae G Valtancoli—p 127
*Tuberculosis of the Hip Joint S Vacchelli—p 159
*Tuberculosis of the Knee R Sacco—p 193
*Tuberculosis of the Foot G Cicconardi—p 209
*Dislocation of Diseased Hip Joint D Maragliano—p 225
Dislocation of the Carpus Two Cases A Nicolra—p 243

Tuberculosis of Vertebrae—Valtancoli relates that the cases of tuberculous spondylitis formed 45 5 per cent of the 2790 cases of tuberculosis of bones and joints given treatment at the Rizzoli Institute in the last twenty years There was a history of trauma in only 7 3 per cent of the total 1,004 cases, and of tuberculous lesions elsewhere in 17 4 per cent The first lumbar vertebra was the one most frequently affected (24 4 per cent) but the mortality was highest with lesions in the upper vertebrae In 612 cases reexamination the fifteenth year after the first symptoms has shown a complete functional cure in 41 per cent, improvement but not entire disappearance of the pains in 25 4 per cent, the condition has grown worse in 8 7 per cent, and 11 6 per cent have died Classified by ages, a complete cure was realized in 53 per cent under 10, in 40 6 under 20, in 30 6 under 30, in 41 under 40, in 23 8 under 50 and in 25 per cent under 60 The corresponding percentages for the improved but not entirely freed from pains are 20 5 under 10, 24 6 under 20, 30 6 under 30, 22 under 40, 30 under 50 and 58 5 under 60

Tuberculosis of the Hip Joint.—Vacchelli gives a similar statistical study of 506 cases at the same institution trauma in 16 per cent, other tuberculous lesions in 28 per cent insidious onset without pain in 20 per cent The outcome from three to twelve years after dismissal has been complete recovery in 11.2, and recovery with slight impairment of function in 62 6 per cent, no benefit in 2 1 per cent and 13 7 per cent have died Prolonged immobilization of the joint is the principle followed in treatment no injury from this was ever noted while the benefit for the joint was incalculable One young woman wore her plaster cast enclosing pelvis and ankle for forty-two months after her return home, but the limb did not suffer The use of Beck's paste has been abandoned When fistulas prevent immobilization in plaster, an apparatus of the Thomas type is used

Tuberculosis of the Knee—Sacco reports on 402 cases only 33 per cent were adults About 70 per cent of the total cases progressed to a spontaneous cure under immobilization, while 182 required operative intervention

Tuberculosis of the Foot—Cicconardi reports the outcome in 145 cases There was a history of trauma in 26.2 per cent and of other tuberculous lesions in 19 3 per cent, and a complete cure was realized in 11 6 per cent and great improvement in 40 1 per cent of the 112 cases given conservative treatment and in 54 5 per cent and 16 1 per cent of the 33 with operative treatment Of the total 145 no benefit was realized in 20 per cent and 3 4 per cent have continued a progressive course

Cure of Chronic Dislocation of the Hip Joint from Coxitis—Maragliano writes from Genoa to extol the excellent results in two children who had been crippled by a destructive inflammatory process in one hip joint He implanted a strip of bone taken from the tibia, to form a support for the ischium on the femur It was not to take the place of any normal bone but to provide a new support in a region naturally free from bone A bed was made for it in muscle and connective tissue and a socket was dug for the upper end in the tuberosity of the ischium A short canal was made in the femur at its upper third slanting from below upward, and the rod of bone was driven through this canal up through the soft parts until the upper end fitted into the socket in the ischium, where it was fastened with silver wire The lower end protruded about 1 cm from the femur shaft, but was held in place by its fitting tight in the canal As the operation was in sound tissue it healed in eight days, in a large plaster cast and in a little over two months the child was walking with a cane The results two years later are most gratifying The bone acts like a new long neck to the femur bearing the weight of the trunk It has grown thicker and the child soon was able to discard all supports In the other case, he implanted the strip of bone in the upper end of the femur and in the ilium its upper end fitting into a bed cut for it in the ilium, the end resting against the crest of the ilium It was held in place by the muscles sutured over it and a plaster cast During the seven years since the limb has been used freely without supports and without pain or other sign of the old inflammation It had healed when the hip joint had been relieved of the burden of weight bearing Although this case proved a success existing infection renders this technic too risky This drawback is avoided with the technic applied in the other case A slight tendency to adduction became evident early although not showing any tendency to progress during the sixteen months since The illustrations show the technic and fine outcome

Pediatria, Naples

April 15 1921 **29,** No 8

*Diagnosis of Whooping Cough E Modigliani and S de Villa—p 337
*Vincent's Angina in Children F de Angelis—p 339
*Epinephrin Test in Leishmaniasis Mazzoni—p 347
Pathogenesis of Chorea G Milio and S Cannata—p 360

Intradermal Test for Whooping Cough—A loop of a culture of the Bordet-Gengou bacillus in 1 c c of distilled water containing a little of a 3 per cent solution of toluene was injected into the skin by the tuberculin intradermal technic The dose for each child was 0 1 c c No response was obtained with various diseases other than whooping cough, while an inflammatory reaction formed constantly in the thirty-eight children with pertussis The reaction was negative also in ten children that had recovered from whooping cough The results were most instructive in three children who had been exposed to pertussis but showed no signs of it at the time They gave a pronounced positive response to the injection, and a few days later the symptoms of pertussis developed

Fusospirillar Infection of the Mouth—De Angelis found this associated infection in 143 of 22,000 children at the Naples Children's Clinic In eighty-nine of the cases there had been a recent infection of some kind generally measles or intestinal disease The tonsils were affected in 6.2 per cent The aspect of the ulcerations imposed the diagnosis in addition to the fetid breath The best treatment seemed to be rinsing with hydrogen dioxid and spraying with calcium chlorid Neoarsphenamin by the vein seemed a valuable adjuvant in some cases When the periosteum of the jaw was involved curetting or cauterization was necessary

Epinephrin Test in Leishmaniasis—Mazzoni obtained slight leukocytosis as a response to the subcutaneous injection of epinephrin in twenty-six children, and a pronounced response in five No effect in driving the parasites out into the blood stream could be detected

Policlinico, Rome

May 23 1921 28, No 21

*Rhizomelic Spondylosis E Banchieri —p 715
*Osmic Acid to Promote Healing of Fractures G Arnaval —p 720
Present Status of Acute Atrophy of the Liver M Prebil —p 724

Rhizomelic Spondylosis—In Banchieri's case the cerebrospinal fluid of the workingman of 48 with ankylosis of the spine was yellowish and coagulated on standing Banchieri ascribes etiologic importance to the man's syphilis This assumption was confirmed by the subsidence of the pains and inflammation under specific treatment although the ankylosis was not modified The spinal disease had developed at once after a fall He regards the trauma as having merely rendered manifest the latent disease

Osmic Acid to Promote Healing of Fractured Bones—Arnaval thinks there can be no doubt that osmic acid injected into the focus exerts a stimulating action on the bone-producing tissues in cases of delayed healing He gives the details of a few of the cases in which he has applied this treatment to illustrate its constant efficacy In one man of 62 with comminuted fracture of tibia and fibula there was not a trace of consolidation after nearly twelve weeks of immobilization, plus massage etc but after direct injection of 2 c.c of a 1 per cent solution of osmic acid repeated at six day intervals, a solid callus formed by the thirty-fifth day The injections sometimes induce smarting and edema, but this is transient and is followed by torpor in the region In some of the seven cases described three injections answered the purpose

May 15 1921 28, Surgical Section No 5

*Diabetes Insipidus After Trauma of Head A Catterina —p 181
*Operative Treatment of Jacksonian Epilepsy O Tenani —p 188
*Experimental Gastro Enterostomy R Brancati —p 197
*Inguinal Aneurysm G Bonfanti —p 218

Diabetes Insipidus After Trauma of the Head—Catterina gives roentgenograms showing how the frontal bone in the man of 42 had been driven in by a fall from a motorcycle Diabetes insipidus developed at once and a fistula in the brow suppurated a little, but there was no fever, and the urine was free from sugar and albumin, and there were no cerebral symptoms Five months later the frontal bone was trephined, the dura found normal and the prompt subsidence of the diabetes insipidus showed that the probable injury of the pituitary from the trauma had been functional rather than organic

Operative Treatment of Jacksonian Epilepsy—Tenani reviews the ultimate outcome in five cases of posttraumatic epilepsy in which he performed a plastic operation on the skull In ten other cases the plastic operation was to close a large defect in the skull The jacksonian epilepsy subsided in all the cases after excision of the cicatrix in the meninges and brain with or without extraction of some sequester or scrap of metal A flap of costal cartilage proved the best means to close the defect in the skull in these cases, but when there is a very large gap in the skull, with functional disturbance a skin and bone flap from the vicinity or a bone-periosteum flap or cartilage flap can be used indiscriminately In the epilepsy cases there is danger from proliferation of bone, so that cartilage is preferable

Experimental Research on Gastro-Enterostomy—Brancati gives the details of his experiments with gastro-enterostomy on twenty-four dogs The results show that the gastro-enterostomy functions diversely according to the portion of the stomach in which the new opening is made as he explains with illustrations When made in the cardial portion it never functions perfectly and it modifies the functioning of the stomach In the middle portion, that is, the lowest segment, conditions are most favorable, and the stomach content passes out this way even when the pylorus is permeable

Inguinal Aneurysm.—Bonfanti's patient was a man of 35 who, for three months before the operation, had systematically applied compression to the external iliac artery for several hours every day to induce development of collateral circulation This preparation for the operation on the spontaneous aneurysm aided materially in the operation which was a complete success

Riforma Medica, Naples

May 7 1921 37 No 19

*Primary Tuberculous Splenomegaly M Bufalini —p 434
Double Fracture of Lower Jaw G M Negrotti —p 438
Psychosis as Sequel of Epidemic Encephalitis V Lojacono —p 441
Recent French Works on Anaphylaxis P Tornara —p 442

Primary Tuberculous Splenomegaly—The woman of 37 had been feeling weak for a month, and a tumor developed in the region of the spleen On assumption of Banti's disease the spleen was removed, and complete recovery followed but the spleen proved to be the seat of a tuberculous process of the miliary type Bufalini compares with this case five similar ones from the records The spleen was removed in all but one in which adhesions rendered splenectomy impossible The general and focal reaction to a tuberculin test might aid in differentiation If splenectomy is not practicable, roentgen exposures might be tried

Rivista Critica di Clinica Medica, Florence

April 5 1921 22 No 10

*Test for Lactic Acid and Sugar E Pittarelli —p 109
The Symptoms of Empyema L Siciliano —p 112

Test for Minute Quantities of Lactic Acid and Sugar—Pittarelli describes some tests for minute quantities of lactic acid and sugar through their transformation into ethylic aldehyd and methylic aldehyd

Archivos Españoles de Pediatria, Madrid

March 1921 5, No 3

*Meningococcus Infection in Children A Pomeo Lozano —p 129
Intracranial Sarcoma in Child V Juaristi —p 182

Meningococcus Infection in Children—Lozano reviews his experience in sixteen cases of meningococcus meningitis in young children He injects large quantities of the antiserum after lumbar puncture repeating daily even after the symptoms have become attenuated He advises utilizing the antiserum for the special type of meningococcus found A hot bath at 37 C for five to fifteen minutes two or three times a day aids in reducing the stiffness pain and agitation He warns that lumbar puncture should be done with the patient reclining and the pelvis should be raised for two hours at least turning the child on the back and sides and on its face and it should be kept reclining for another six hours without a pillow Eight of his sixteen little patients recovered but one was left deaf and another lost both vision and hearing The meningococcus seems to induce septicemia at first and meningococcus septicemia should be suspected without waiting for development of meningitis It may be possible thus to cure it with antiserum before the infection has attacked the vital organs Three of his cases belong in this group the septicemia having been evident for about two weeks before the meningitis developed In one of his cases the septicemia dominated the clinical picture

Archivos Latino-Amer. de Pediatria, Buenos Aires

March April 1921 15 No 2

*Acute Polio Encephalomyelitis A Gareizo —p 97
Hydatid Cyst Simulating Acute Appendicitis J S Fabres —p 107
Night Frights in Children L K Wimmer —p 112
Epidemic Meningitis in Infants L Averza and C M Pico —p 116
Pneumococcus Septicemia Alicia Armand Ugon —p 119
Tardy Tetanus C Pelfort —p 122
*Luxation of Hip Joint after Typhoid A Rodriguez Castro —p 125

Acute Polio-Encephalomyelitis—The child of 6 presented symptoms of both poliomyelitis and cerebral spastic hemiplegia and Gareizo discusses how these two syndromes came to be superposed

Typhoid Hip Joint Disease—In Rodriguez' case a spontadislocation of the hip joint was the result of a destructive process three weeks after a focus of osteitis in the tibia on the same side, in the third week of typhoid fever He mentions that Keen has compiled thirty cases of pathologic luxation of typhoid origin including twenty-seven involving the hip joint. Broca has recently published a case of similar dislocation of the hip joint from a scarlatinal arthritis As the inflammation subsides reduction and a plaster cast will usually insure ankylosis in a good position

Influence of Diet on the Thyroid Gland—Tsuji's experiments were mainly on young rats The results confirm the histologic changes in the thyroid in animals feeding on special diets Growth could be arrested by a special diet, but would then start up anew when a minute quantity of certain growth-promoting substances was added to the food Secondary changes were produced in the gonads, parotid and pancreas and other organs with the special diets The article is in English and profusely illustrated

Beitrage zur klinischen Chirurgie, Tubingen

1921 **121**, No 1

*Luxation of the Patella J Hohlbaum—p 1
*Malignant Goiter G Wolff—p 56
*Location of the Bile Ducts G Pallin—p 68
*Cancer of the Bile Ducts G Pallin—p 84
*Decompressive Trephining Gertrud Bodewig—p 138
*The Appendix in Hernial Sac Niedlich—p 167
Rinsing Out the Pelvis in Peritonitis A Sohn—p 191
*Regeneration of Heart Muscle in Wounds H Klose—p 220
Treatment of Fracture of the Patella W Speck—p 226
Reconstruction of Finger Pulp by Pulp from Toe Muller—p 234

Luxation of the Patella—Hohlbaum explains with illustrations how deformities may develop as the extreme of physiologic variations, his conclusions confirming that statics and dynamics combine to mold the leg

Malignant Goiter—Wolff's three colored plates and other illustrations show the photomicrograms of three cases of proliferating goiter, epithelial cancer of the thyroid, in two young [illegible]rothers, and in a woman of 48

Biliary Passages—Pallin describes how the bile [illegible] the same irregular, anomalous course in the [illegible]

Hepatic and Common Bile Ducts—Pallin [illegible] of this kind—in Borelius' service A radical [illegible] but an anastomosis operation [illegible] ases, a [illegible] he ducts were drained No [illegible] died almost at once and [illegible] bed [illegible] erative cholemic hemorrhage [illegible] of [illegible] due indirectly to the [illegible] esp [illegible] he fatal outcome The [illegible] eat until the jaundice [illegible] e [illegible] o four weeks Continuing jaundice is from [illegible] allowed to go over [illegible] son with the operation later than the third [illegible] rate are comparable

[illegible] explains how the [illegible] d along the line of [illegible] id obstacle, namely, [illegible] r and a decompression would supplement the [illegible] he latter is located [illegible] by the tenderness [illegible] lation of cerebrospinal of the head, it is [illegible] against compression mainly, if not [illegible] ing but moderate [illegible] g in the back of [illegible] cretions, choked [illegible] es tabulated, the [illegible] urned to normal [illegible] nything left but [illegible] en years later [illegible] the old trephining [illegible] cases in which [illegible] re on the same [illegible]

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Deutsches Archiv fur klinische Medizin, Leipzig

April 29 1921 **136**, No 1 2

*Test Injection of Epinephrin E Billigheimer—p 1
*Heredity in Hemolytic Jaundice E Meulengracht—p 33
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Heredity of Jaundice—Meulengracht gives the genealogical tree of nine families in which hemolytic jaundice has appeared in three generations as a dominant property It appeared suddenly and spontaneously probably a mutation From this member of the family it was inherited according to the rules of dominants, half of the children presenting it, the other half remaining free and their descendants also free from it

Cardiography of Exposed Heart—Kapff gives the cardiograms from different points in the ventricle which lay close to the skin in the man of 42, after removal of a large dermoid cyst with resection of several ribs

The Reaction of the Pylorus to Atropin.—Otvös comments on the great difference between the action of atropin on pylorospasm according as it is spontaneous or induced It has no effect on the sound stomach but it cures the spasm of the pylorus induced by morphin He theorizes to explain this different effect why atropin can cause retention with organic disease while it has no effect on the normal stomach

Occurrence of Glycuronic Acid in Blood—Stepp and Diebschlag report their research in this line in thirty-three cases of diabetes and kidney disease and a number of healthy subjects

Quinidin in Treatment of Auricular Fibrillation—Frey now has a record of fifty cases in which he has given quinidin, with highly satisfactory results in 42 per cent, the continuous arrhythmia subsiding He gave it in 0 4 gm doses, three times a day, for from six to eight days beginning with half this dose and gradually increasing to 1 2 gm during the day Doses smaller than 0 2 gm are futile Lost compensation must first be restored with digitalis, if possible Then, after a week's suspension the quinidin may do good service Recent cases of auricular fibrillation are especially suited for this treatment In almost every case the drug restores the normal heart beat when the fibrillation and arrhythmia have developed in consequence of an operation or pneumonia or trauma Great relief is experienced as the sinus rhythm is restored He says in conclusion that this drug will render especially good service in general practice The paralyzing action of quinidin can be combated with caffein or theobromin The fibrillation was never brought back by caffein in his experience The best results are obtained with fibrillation of nervous origin A much dilated heart cannot be brought back to its normal rhythm or only transiently and cases that do

Archivos de Neurobiologia, Madrid

December 1920 1, No 4

The Trophic Reflexes Inducing Glycemia A Pi y Suñer—p 338
*Vocational Orientation E Mira Lopez—p 356
*Pathogenesis of Tabetic Ataxia G R Lafora—p 381
*The Pituitary in Adiposis Dolorosa W Lopez Albo—p 389
*Paraphrenia J Sanchis Banus—p 405
*Coagulation of Spinal Fluid B Rodriguez Arias—p 416

Vocational Orientation—Mira Lopez enumerates the various tests and appliances used at the psychotechnical laboratory at the Instituto de Orientacion at Barcelona to aid in the selection of a trade or profession or special work

Pathogenesis of Tabetic Ataxia—Lafora remarks that the ataxia may be intense when the sensory disturbances are slight, or vice versa, so that there can be no question of parallelism between them In a case of congenital tabes described, the ataxia had developed rapidly in the young man but there was no analgesia of joints and periosteum The ataxia rapidly subsided after the second intraspinal injection, and with it the girdle pains In two other cases of acute and intense ataxia, the periosteum sensibility was intact Notable improvement was realized promptly under intraspinal treatment of the men of 34 and 42 In two other cases in men of about the same age the periosteum sensibility was lost, but *the articular was intact in one, in the other the tendon* reflexes were also abolished There was no ataxia in either, but lightning pains and sphincter disturbances confirmed the presence of tabes Such cases suggest that other factors besides the purely sensory are involved in the pathogenesis of tabes He queries whether there are different forms of tabes and whether other nerve centers may not be involved in their production, the brain, the optic nerve, the cerebellum or the labyrinth

The Pituitary and Adiposis Dolorosa—Lopez Albo says that less than ten cases of adiposis dolorosa have been published in Spain, and he adds another to the list No appreciable benefit has been derived to date in his case from pituitary, thyroid or ovarian treatment The variety of lesions that have been encountered at necropsies in such cases shows the various factors liable to be involved and the necessity for individualizing treatment In his case there are pains in the temples and back of the orbit, congestion in the optic disk, and the sella turcica seems small—all of which points to some anomaly in the pituitary gland as cooperating in the clinical picture There seem to be points of contact between this disease and circumscribed edema and symmetrical painful lipomatosis, although the latter is more common in men In conclusion various cases are cited in which widely different treatments proved effectual, with a basis of the proper organotherapy, tonics, sodium salicylate dieting, hot baths, active exercise, electrotherapy, massage and antineuralgics

Paraphrenia—Sanchis Banus describes with minute detail a case of chronic mental derangement, commencing in the late thirties of the expansion paraphrenia type, with no trace of schizophrenia

Coagulation of Spinal Fluid—The syndrome of Froin developed in the woman of 52 two years after removal of the breast for cancer The spinal fluid coagulated spontaneously *en masse* This was discovered during spastic paraplegia of recent onset, and the woman soon died with signs of metastasis in the lung

Repertorio de Medicina y Cirugia, Bogota

March 1921 12 No 6

Text of Resolutions Adopted at Sixth Sanitary Conference of American Republics—p 288
*Extraction of Calculus in Kidney Pelvis G Rico—p 295
*Fixation Abscess in Puerperal Mania A Gomez Calvo—p 305
Suggestions for Model Public Health Service E R Coni—p 307
*Complications of Gastro Enterostomy A Torres Martinez—p 321
Conc n

Extraction of Calculus in Renal Pelvis by Natural Routes—Rico's patient had been having symptoms of nephrolithiasis for six years Pyelonephritis finally compelled urgent measures, and he rinsed out the pelvis on each side, and later the right pelvis only, leaving the catheter in the ureter for six hours and, again, for twelve hours, as the calculus moved slowly downward in the following weeks It finally protruded from the mouth of the ureter in the bladder, but slipped back into the ureter Again the greased ureter catheter was introduced for several hours The calculus was then spontaneously expelled

Fixation Abscess in Treatment of Puerperal Mania—*Gomez Calvo now has a record of fifteen cases rebellious to* all other measures, and the mania subsided at once in every instance, only two of the women required a second injection No benefit was apparent in mania of other origin This is his second publication on the subject, and he reaffirms the practically specific action of injection of 1 c c of turpentine under the skin, repeated 3 or 4 cm beyond By the eighth day an ample incision releases 70 or 80 gm of pus In his cases no micro-organisms could be cultivated from the pus

Complications of Gastro-Enterostomy—A fatal case of what seemed to be a postoperative peptic ulcer is described in a man of 64 In a second case the peptic ulcer had formed in the afferent loop, and had opened into the colon In a third case a man of 40, acute dilatation of the stomach followed the gastro-enterostomy but this was soon brought under control In one woman of 27 the afferent loop became so distended with secretions the fourth to sixth day after the gastro enterostomy, that it compressed the efferent loop until a supplementary jejunojejunostomy became necessary In still another case the gastro enterostomy was done to relieve a tumor at the pylorus with great dilatation of the stomach Repeated gastrorrhagia followed, rapidly debilitating the man of 41

Siglo Medico, Madrid

April 30 1921 68, No 3516

Pathogenesis of Tabetic Ataxia Gonzalo R Lafora—p 405
Typhoid Epidemics and Hazen's Theorem F Murillo—p 408 Cont'd
*Pharyngeal Tuberculosis J M Barrajas y de Velches—p 413 Conc n

Tuberculous Lesions in the Pharynx—Barajas comments on the difficulty of distinguishing between tuberculous and syphilitic lesions of the pharynx He has applied heliotherapy in a number of cases but the course of the lesion never seemed to be modified thereby Radium has given gratifying results applied directly to the focus This local treatment must always be supplemented with general measures and tuberculin He applied the filtered radium rays for two hours every fifth day His *cases include one of lupus of the pharynx* treated in this way In another case a scrap from the isolated lesion in the pharynx had suggested tuberculosis, but under tentative mercurial treatment the lesion retrogressed completely The Bossan intratracheal vaccine therapy might be given a trial, he adds, when other measures are not available

Acta Scholae Medicinalis Univ Imp Kioto

March 25 1920 3, No 4

Toxic Action of Extracts of Fibrin T Masuda—p 457
*Action of Drugs on Respiration N Ishiwari—p 501
Various Reactions of Heart to Toxins J Ono—p 539
*Cytotoxic Serums and Vital Staining M Ogata—p 563
*Sugar in Cerebrospinal Fluid I Ino—p 609
Action of Salts of Aromatic Acids K Okushima—p 667
Toxicity of Organ Extracts A Nagamachi—p 695
*Effect of Diet on Thyroid Functioning K Tsuji—p 713
Intravital Transformation of Bromin T Yoshitomi—p 729
Metorchis Found in Gallbladder of Domestic Duck H Tanabe—p 733

Action of Toxins on Respiration Center—Ishiwari reports that epinephrin checked respiration when injected intravenously but the functioning of the respiration center was increased by alcohol, camphor, caffein and certain other drugs as well as by epinephrin in subcutaneous injection

Vital Staining After Injection of Cytotoxic Serum—Four colored plates are given showing the cytotoxic action after the animals had incorporated the carmin stain The vital stain becomes deposited in the cells injured by the cytotoxic serum The nephrotoxic and hepatotoxic serums seemed to be specific to species and organ A goat cytotoxic serum which was very poisonous for rabbits had little effect on guinea-pigs and puppies

Sugar in the Cerebrospinal Fluid—Ino devotes fifty pages *to this account of experimental research on the sugar in the* cerebrospinal fluid The article is in English

Influence of Diet on the Thyroid Gland—Tsuji's experiments were mainly on young rats The results confirm the histologic changes in the thyroid in animals feeding on special diets Growth could be arrested by a special diet, but would then start up anew when a minute quantity of certain growth-promoting substances was added to the food Secondary changes were produced in the gonads, parotid and pancreas and other organs with the special diets The article is in English and profusely illustrated

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Course of Biliary Passages—Pallin describes how the bile ducts may show the same irregular, anomalous course in the fetus as in adults

Cancer of the Hepatic and Common Bile Ducts—Pallin analyzes 52 cases of this kind in Borelius' service A radical operation was attempted in only 4 but an anastomosis operation was done in 9 cases, and in 7 the ducts were drained No less than 25 of the 31 operated on died almost at once, and half of them succumbed to postoperative cholemic hemorrhage, and 2 to anuria probably also due indirectly to the cholemia Thus in 18 of the 25 fatalities, damage from the bile in the blood was responsible for the fatal outcome The danger from the cholemia is seldom great until the jaundice has lasted for from three and a half to four weeks Consequently on suspicion that severe persisting jaundice is from malignant disease it should never be allowed to go over three weeks before operating In comparison with the importance of having the operation done not later than the third week, all other efforts to reduce the death rate are comparatively negligible

Decompressive Trephining—Bodewig explains how the secretions from a focus in the brain spread along the line of least resistance until they meet with a solid obstacle, namely, the dura The dura bulges and is tender and a decompressive operation at this counter-field should supplement the decompressive operation at the focus The latter is located by the focal symptoms, the counter-field by the tenderness The decompressive operation for accumulation of cerebrospinal fluid should always be in the back of the head, it is vitally important to protect the brain-stem against compression Trephining the counter-field is useful mainly, if not exclusively, in the cases of gradually increasing but moderate pressure When supplemented by an opening in the back of the head for constant draining away of secretions, choked disk subsides In one of the thirty-six cases tabulated, the vision, the gait and other focal symptoms returned to normal By the end of the year there was scarcely anything left but dizziness on stooping over Necropsy seven years later revealed a tumor in the cerebellum just below the old trephining scar The best results were obtained in the cases in which the focus and the counter-field or fields were on the same side of the head

Appendix in Hernial Sac—Niedlich compares with his 13 cases 111 from the literature in which the appendix was included in the hernial sac In 15 cases the appendix was alone but sound, in 29 it was diseased The hernia was inguinal in 92 men and 5 women and femoral in 3 men and 24 women The leukocyte count may suggest involvement of the appendix

Regeneration of Heart Muscle in Wounds—Klose's experience has shown that a defect in the myocardium heals only by cicatricial tissue There is no actual regeneration Catgut induces more of a reaction than silk Interrupted silk sutures are the best in operations on the heart

Deutsches Archiv fur klinische Medizin, Leipzig

April 29 1921, **136**, No 1 2

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not respond well to digitalis or other measures are generally refractory to quinidin also In his fifty cases, in 12 per cent the fibrillation was transformed to a regular flutter No difference was observed between the cases with slow or rapid beat, about half of each were refractory Two thirds of the cases with fibrillation of recent development were benefited, when the fibrillation was of more than one years standing, only 4 per cent improved The sinus node seems to forget in time how to work automatically In the cases with lost compensation or with dilatation, when benefit occurred, it persisted for more than one month in 66 per cent of the cases

Residual Nitrogen in the Blood Under the Influence of Venesection.—Löwy and Mendl report from their research in ten cases that both venesection and sweating procedures tend to induce hydremia Venesection does not succeed in reducing the residual nitrogen content of the organism to any essential extent, but the reactions which follow frequent withdrawal of small amounts of blood may aid in further detoxication

Deutsche medizinische Wochenschrift, Berlin

May 5 1921 **47**, No 18

Renal Functional Tests L Casper —p 493
Streptococcus Endocarditis P Jungmann —p 496
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*The Sehrt Abdominal Aorta Clamp R Fleischer —p 508
Artificial Vagina in Masculine Pseudohermaphrodism Gruss —p 509
Review of the Vitamin Theory to Date L Asher —p 510
Acute Diarrhea in Infants L Langstein —p 512

Use of the Sehrt Abdominal Aorta Clamp in Obstetric Hemorrhage—Fleischer relates his experiences with Sehrt's device for isolated compression of the abdominal aorta, a description and illustration of which will be found in THE JOURNAL, Feb 28 1920 p 640 He has used the contrivance in twenty-one cases of abnormal obstetric hemorrhages Nine patients were in grave collapse and the effect of the compression was prompt and exact The uterus which up till then was relaxed and extended to the costal arch contracted and hemorrhage ceased The pulse became stronger and quieter On an average the Sehrt instrument was left on for twenty-five minutes, the longest time being an hour When the pressure of the clamp was removed, hemorrhage did not set in again It requires some care to adjust the instrument correctly, so that the aorta shall not be only partially compressed, which is dangerous owing to temporary stasis followed by a rush of blood In two cases it appeared as if the patients would scarcely have survived the collapse if the hemorrhage had not been thus promptly checked Fleischer has introduced a few modifications in the instrument whereby the pressure on the back is distributed over a larger area, and the instrument can be taken apart to carry in the bag No direct or indirect injury from the compression was observed in any instance, not even postmortem in the one fatal case, the already exsanguinated woman having succumbed notwithstanding the thirty minutes of application of the clamp

Deutsche Zeitschrift fur Chirurgie, Leipzig

May 1921 **162** No 3 4

*Contractures A W Meyer and N Spiegel —p 145
*Electrophysiology of Diseased Muscles E Rehn —p 155
*Puncture of Gallbladder H Burckhardt and W Muller —p 168
*Pathologic Constitutions and Surgery K H Bauer —p 198
*Operative Correction of *Median Paralysis* E *Huber* —p *271*
*Fever with Arthritis F Rost —p 276
Suprarenalectomy in Epilepsy Pohrt —p 282

Contracture Under Immobilization—The research on thirty-four cats confirms what was learned from frogs, namely that contracture does not occur, under an immobilizing bandage when the nerve supply of the muscles has been cut off The contracture is of nervous origin, the result of a fixation reflex The more irritated the nerve the prompter and more pronounced the contracture

Electrophysiology of Diseased Muscles—Rehn gives the curves from a number of cases of *spastic and flaccid paralysis* in which the electric responses were investigated by plunging a platinum needle from 0 5 to 2 cm into the belly of the muscle The findings confirm the difference between the cerebral and spinal forms of paralysis

Puncture of Gallbladder—Burckhardt and Muller give nine plates showing the introduction of a very fine steel cannula into the gallbladder in cadavers and in five clinical cases By this means it is possible to inject a contrast fluid for roentgenoscopy, and the results already realized suggest the possibility of arresting in this way acute attacks of gallstone colic, and modifying catarrhal conditions and, possibly, direct dissolving of the gallstones They describe their tentative research and the technic for reaching the gallbladder In two of their clinical cases this proved impossible, but in one case morphin was injected and in the others the collargol injected facilitated roentgen examination. In these cases the gallbladder was removed the next day, confirming the puncture findings

Pathologic Constitution and Surgery—This subject was discussed at the recent German Surgical Congress and one address was summarized in the Berlin Letter, June 4 1921 Bauer devotes nearly 100 pages to discussion of the importance of the conception of *Konstitutionspathologie* for medical thinking with special regard to surgery

Operative Correction of Median Paralysis—Huber has been able to restore function to the thumb and forefinger by suturing the abductor muscle of the little finger to the flexor of the thumb Two incisions are required for this, one parallel with the little finger and the other axial to the thumb The forefinger was brought under control by transplanting the abductor of the thumb to the tendon sheath of the profundus flexor of the forefinger The article is illustrated

Fever with Arthritis—Rost reports experiments on rabbits which demonstrated that substances are absorbed from the joints as well as from the subcutaneous tissue but more slowly The amount of toxin to be absorbed is probably larger in a diseased joint than from an abscess in the soft parts and encapsulation does not occur while the exchange of fluids between the tissue cells and the bacteria does not proceed so regularly These features of suppurating arthritis easily explain the high fever

Monatsschrift f Geb u Gynakologie, Berlin

November 1920 **52**, No 5

*Lingual Goiter and Pregnancy H Rubeli —p 295
*Spontaneous Delivery in Frontal Presentation J Heyman —p 303
*Manual Separation of the Placenta Hammerschlag —p 311
*Statistics of Extra Uterine Pregnancy A Wiegand —p 316
*Case of Tumor of the Placenta H Rocher —p 325
*Phantom Tumor of Bladder A Mayer —p 332
*Diphtheria in the Newborn F H Lietz —p 340

Lingual Goiter and Pregnancy—The lingual struma first appeared at puberty, it increased in size with menstruation and grew much larger during a pregnancy It reached such a size just before delivery that tracheotomy seemed imperative but after cesarean section at term the goiter subsided to its former size before the pregnancy

Spontaneous Delivery at Term in Frontal Presentation—Heymann analyzes thirteen more cases of delivery of a well developed child at term in alleged mentoposterior frontal presentation Eliminating the dubious cases the one he here reports he says, is only the eighth on record

Manual Separation of the Placenta—Hammerschlag relates that recently three patients treated by manual separation of the placenta on account of hemorrhage, with preexisting infection, all succumbed to septicopyemia In a fourth similar case he removed the uterus through a laparotomy without attempting to separate the placenta This woman was the only one in the group that recovered Hence he advocates waiting only six hours before intervention in private practice, in the clinic expectant treatment can be kept up much longer Turgidization of the placenta may render good ser-

vice in such cases With manifest infection, streptococci in uterus and blood, and rigors hysterectomy is safer than manual separation of the placenta

Extra-Uterine Pregnancy—Wiegand reviews the experiences with extra-uterine pregnancy at the Magdeburg maternity during the last thirteen years, a total of 210 operative cases The mortality was 3 8 per cent but in 2 9 per cent death was due to preceding loss of blood

Placental Tumor—Roscher removed a tumor a chorioangioma weighing 150 gm from the placenta of a woman of 32

Phantom Tumor of the Bladder—The tumor was the result merely of a peculiar spasm of circular contraction in the bladder wall The subsidence of the tumor restored the capacity of the bladder from 50 to the preceding 150 c c The cystoscope had revealed three round holes which seemed to be the mouths of diverticula but as the local contractions subsided the mucosa smoothed out flat

Diphtheria in the New-Born—Lietz found that 14 4 per cent of twenty-one new-born infants were diphtheria bacilli carriers and 2 5 per cent of 606 born in the maternity in his charge He made a practice of injecting antitoxin into both mother and infant when diphtheria bacilli were found, but the results were disappointing, and it has now been abandoned

Munchener medizinische Wochenschrift, Munich

May 6 1921 **68** No 18

Treatment of Tuberculous Pleural Empyema W Jehn—p 537
Threshold Excitation the Secret of Protein Therapy Zimmer—p 539
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Two Incarcerated Hernias Femoral and Obturator Hutten—p 552
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Stereophotogrammetric Roentgen Reliefs C Muller—p 554
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Need of Absolute Hemoglobin and Erythrocyte Count K Burker—p 571
Residual Air and Reserve Air of Lungs R Geigel—p 576
Fractional Examination of the Spinal Fluid F Weinberg—p 577
Hunger Edema in Infants F Hamburger—p 579
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Differentiation of Active Tuberculous Focus L Preis—p 583
Modified Lavage of Spinal Canal K Kading—p 583
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Toxic Action of Minute Dose of Apomorphin E Seuffer—p 584
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Artificial Pneumothorax in Tuberculosis Plehn—p 586

Wiener klinische Wochenschrift, Vienna

April 28 1921 **34**, No 17

Treatment of Gonococcus Infection of Adnexa Bucura—p 195
Effect of Alcohol on Flocculation of Lipoid Antigen R Muller—p 196
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Intravenous Therapy and the Effect of Intravenous Administration of Hypertonic Solutions K Stejskal—p 200
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May 5 1921 **34**, No 18

Normal Weight B Sperk—p 210
The Incision in Cholecystectomy O Foderl—p 212
Osteomalacia H Schlesinger—p 213
Postoperative Lung Complications F Mandl—p 214
Peculiar Injury from Explosion F Orthner—p 215

Statistics on Postoperative Lung Complications—Mandl found on studying the case reports of Hochenegg's surgical service in Vienna that following goiter operations lung complications were more frequent after general than after local anesthesia After hernia operations the reverse was true In operations on the stomach, the frequency of lung complications depended more on the character of the intervention than on the mode of anesthesia Lung complications were more common after resection than after gastro-enterostomy Grave cases of pneumonia occurred oftener after general narcosis than following local anesthesia It was noticeable that the farther away the operated area was from the region of the abdomen, which participates in the respiratory movements the less frequent were the lung complications After 1,379 hernia and abdominal operations such complications arose in 14 5 per cent of the cases After 1 585 operations on the head, neck, buccal cavity mamma rectum or the extremities, there were only 8 5 per cent of cases of postoperative lung involvement It was especially remarkable that after 478 radical operations on the rectum in the case of patients much weakened by carcinoma, lung complications followed in only 3 9 per cent of the cases That chilling of the patient is an important factor was shown by the marked increase in lung complications during the winter of 1919 1920 when owing to the scarcity of coal the operating rooms and the wards could not be adequately heated At this time they began the use of digitoxin as a prophylactic measure to ward off postoperative lung complications In this manner the percentage of lung complications was reduced from 27 per cent (as of that period) to 8 per cent The effect may perhaps be explained by the reaction of the pulmonary vessels and the change in the blood distribution thus produced

Zeitschrift fur Tuberkulose, Leipzig

February 1921 **33** No 5

Tuberculosis in Young Children Since the War F Umber—p 257
Partial Antigens in Surgical Tuberculosis F Landauer—p 261
*Prophylaxis of Tuberculosis C Jaenicke—p 265
*Artificial Pneumothorax E Mory—p 272
*Pulmonary Tuberculosis After War Wounds H G Austgen—p 274
Case of Tuberculous Articular Rheumatism G Michels—p 279

Prophylaxis of Tuberculosis—Jaenicke has been trying Petruschky's method of percutaneous tuberculin treatment in sixty-four children in 1917 and in 275 in 1919 The method is the injunction of a mixture of tuberculin and the antigens of the common micro-organisms that accompany tuberculosis, that is the pneumococcus, streptococcus and staphylococcus Petruschky calls the mixture the anticatarrhal liniment, and he has advocated this percutaneous treatment for systematic eradication of tuberculosis in communities Jaenicke states that in his experience this treatment of the children threatened with tuberculosis has resulted in a striking number of cases in which the children made fine progress and no injurious by-effects were observed in any instance Time alone will show whether it is possible by this means to eradicate tuberculosis in families and in communities, but Jaenicke is convinced that the prospects are encouraging

Artificial Pneumothorax—Mory has never encountered in the literature a case like the one he describes The retrospective diagnosis from the necropsy findings was that the right pleura had extended over the diseased left lung, and in inducing the pneumothorax the needle had traversed this abnormally located pleura and had pierced the wall of a bronchiectatic cavity Air had thus penetrated into the right pleural sac with a valve closure of the opening This resulted in the right pleura becoming so distended with air that the right lung was completely compressed, while the diseased left lung was unable to keep up sufficient respiration

War Injuries and Pulmonary Tuberculosis—In four cases the pulmonary tuberculosis had developed after the lungs had been gassed In thirteen the contusion of the chest was supposed to be the cause of the tuberculosis but the history of the cases proved that the injury had merely roused the latent disease In another group of fifty-eight men with war wounds elsewhere than in the chest there were only three in which a connection between the trauma and the pulmonary tuberculosis could be accepted

Case of Tuberculous Articular Rheumatism — Michels reports a case of what seemed to be acute articular rheumatism developing in the course of pulmonary tuberculosis in a man of 32 The course was subacute but there were occasional exacerbations and involvement of other joints, but no endocarditis, and no modification of the disease by salicylates and other measures useful in rheumatism As the pulmonary disease improved the rheumatic phenomena retro-

gressed with it, and finally disappeared completely with no recurrence during the two years to date

Zentralblatt fur Chirurgie, Leipzig

May 7 1921 **48**, No 18

*Volvulus of the Stomach E Siegel —p 618
*Deepseated Foreign Bodies in Esophagus F von Fink —p 623
Hinge Joint Casing for Flail Elbow Joint W Felix —p 626

Volvulus of the Stomach—Siegel reports a case of volvulus of the stomach in a 2 year old child He found only one other case in the literature of volvulus of the stomach in childhood, and only about twenty cases in adults In Siegel's case, after lavage the distention disappeared but returned in five hours A median incision from the xiphoid process to the umbilicus was made The stomach wall did not present a markedly changed appearance The untwisting process was easily accomplished by traction on the stomach The usual prophylactic measures to prevent recurrence—fixation of the stomach wall, or shortening of the hepatoduodenal ligament or the lesser omentum—he did not resort to, as there are so many disagreeable eventualities associated with such procedures The child has had no further trouble during the four years since the operation

Removal of Foreign Body in Esophagus by Way of the Stomach—Fink recalls von Hacker's statement that the most dangerous position for a foreign body in the esophagus by reason of the difficulty of removal is at a distance of from 27 to 33 cm from the upper teeth Fink reports a case in which he removed a plate of five teeth from the esophagus by way of the stomach The foreign body was located 33 cm from the teeth, and several futile attempts to remove it under esophagoscopy had already been made elsewhere In 1918 Hacker was able to collect only thirty-eight cases in which foreign bodies had been removed by the stomach route In Fink's case, an incision 12 cm long and parallel to the greater curvature and the vessels allowed the introduction of the gloved left hand Without difficulty the cardial opening could be reached with the forefinger, and the lower edge of the plate was located 3 cm from its lumen With the palpating finger he discovered that two opposite corners of the plate had penetrated the swollen walls of the esophagus and lacerated the mucous membrane After trying several instruments the plate was removed with curved forceps 25 cm long the forefinger being inserted in the esophagus to distend it and loosen the upper corner of the plate where it was impacted in the wall of the esophagus The rubber plate had four incisors and the left canine tooth the plate measuring 3 by 4½ cm, the row of teeth spreading to 4¼ cm

Zentralblatt fur innere Medizin, Leipzig

April 30 1921 **42**, No 17

*Residual Nitrogen in Blood and Tissues H Strauss and E Becher —p 345

Residual Nitrogen in the Tissues in Various Diseases—Strauss and Becher present evidence that a marked retention of abiuret nitrogen in the blood and in the tissues before death is more common than is generally supposed, and that its presence is a contributory factor in the causation of death Values were arrived at which showed the falsity of the assumption that the residual nitrogen in the blood does not increase until saturation of the tissues has taken place The greates accumulations of residual nitrogen in the body were found in cases with distinct symptoms of genuine uremia

Nederlandsch Tijdschrift v Geneeskunde, Amsterdam

April 30 1921 **1**, No 18

*Reaction Time in Arm and Fingers J W Rolder —p 2379
*High Frequency Current in Therapeutics H C Folmer —p 2404
*Anesthesia for Tonsillectomy A S Jacobson —p 2409
Ascarids Found in Inguinal Abscess J Wiegersma —p 2412
*Rabies in the Netherlands J Hulshoff Pol —p 2453

Reaction Time in Arm and Fingers—This long report of experimental physiology and clinical research at the Amsterdam physiology institute confirms among other things that the reaction time is shorter for the arm than for the fingers, with both sensory and motor psychobiologic responses

High Frequency Current.—Folmer lauds the cures he has obtained with systematic d'Arsonvalization in treatment of various affections, including a case of long rebellious universal arthritis in a young man After treatment with the high frequency current he regained his earning capacity and joined a football team Also in a case of obesity in which the weight dropped 20 kg, in relief from diffuse pruritus, and in cure of impotency, and of melancholia of ten months' standing Great benefit was derived in three cases of pulmonary tuberculosis, the night sweats, expectoration and fever subsiding and the patients gaining in weight Folmer adds in conclusion that we can scarcely overestimate the influence of d'Arsonvalization on the metabolism and its indirect influence on diabetes, gout, rheumatism and nervous diseases, pruritus and disfiguring scars, warts, angiomas, etc, which, he says, subside under this painless and simple treatment, sometimes without leaving a trace

Anesthesia for Tonsillectomy—Jacobson's experience confirms the special advantages of local rather than inhalation anesthesia for operations on the tonsils even in children

Prophylaxis of Rabies—Rabies is kept out of the Netherlands as a rule by the strict measures enforced against dogs, but some recent cases have called attention to the enormous distances a rabid dog may cover, thus starting foci at remote points Pol, as chief health officer of the Utrecht province, advocates even stricter measures, namely, that for four months after a dog has been suspected of rabies all other dogs in the region must be muzzled and be held by a leash outside of the house, no dogs should be allowed to be taken out of the contaminated province, and all dogs running at large, even though muzzled, should be shot

Acta Medica Scandinavica, Stockholm

May 17, 1921 **55**, No 1 2

*The Suspension Stability of the Blood R Fåhræus —p 3

Speed of Sedimentation in the Blood—The name of Fahræus is connected with the early diagnosis of pregnancy by means of the increased speed of sedimentation of the corpuscles in citrated blood He here devotes 228 pages to an exhaustive study of the subject (in English) from various standpoints and 400 tests He commends the use of a pipet with an inner diameter of 2 5 mm, with this a high blood column (200 mm) is obtained with very little blood The pipet is placed in a stand where a steel spring presses the mouth of the pipet against rubber Most of his tests were made with tubes of 9 mm inner diameter, the height of the 1 to 4 citrate-blood mixture being 150 mm A 2 per cent solution of sodium citrate is used, and the reading is made in one hour In healthy men the sinking value averages 3 3 mm per hour, in healthy women, 7 4, but in the pregnant it averages 44 9 mm This increase is progressive, starting from the very first and increasing week by week The sinking values are notably increased in almost all pathologic cases so that a single stability reaction has diagnostic significance only when the pregnant woman is otherwise normal But a progressive increase in the response points almost certainly to pregnancy Any values above 9 mm per hour for men and 12 mm for women, must be regarded as pathologic changes in the suspension stability of the blood It can be directly and instructively studied in the capillary and retinal circulation Heating reduces the agglutinability of the blood, thus reenforcing the suspension stability

Ugeskrift for Læger, Copenhagen

April 28 1921 **83**, No 17

*Meningitis from the Influenza Bacillus M Christiansen and M Kristensen —p 551

Meningitis from the Influenza Bacillus—Christiansen and Kristensen describe three cases of meningitis in infants of 6 and 10 months and a child of 2, with necropsy in the younger children The influenza bacillus was cultivated from the three cases in pure cultures They think that meningitis due to Pfeiffer's bacillus is probably more common than generally recognized but escapes detection Systematic lumbar puncture is the main reliance in treatment In the case with recovery, a total of 560 c c of spinal fluid had been withdrawn in the course of the month

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ACUTE POSTOPERATIVE DILATATION OF THE STOMACH*

EMIL NOVAK, M D

BALTIMORE

There are several reasons why the subject of acute postoperative dilatation of the stomach should be of interest to every surgeon In the first place, this complication is of greater frequency than has usually been thought Secondly, it is very often unrecognized or mistaken for some other condition Finally, the surgeon's failure to recognize its nature is always serious, and not infrequently fatal, to the patient There are few surgical complications in which early diagnosis is so directly reflected in the results to the patient as in the one under discussion As Muller [1] has put it, "Here the diagnosis is everything" (Hier ists die Diagnose Alles) It is the surgeon who is constantly on the lookout for this complication who will recognize it when it presents itself

HISTORICAL

Although cases of acute gastric dilatation had undoubtedly been described before the report of Sir Hilton Fagge [2] in 1873, certainly this author deserves the credit for the first thorough presentation of the subject From a purely clinical point of view, Fagge's classic description of the symptomatology will suffice for present-day purposes He himself says that "dilatation of the stomach, independent of obstruction at the pylorus or in the small intestine, is a condition which has long been recognized" He alludes especially to cases previously reported by Brinton, Bennett, and Miller and Humby The description by Brinton [3] is of especial interest, as we shall see, from the standpoint of the etiology and mechanism of the condition

Of the two cases reported by Fagge himself, one was observed in association with a retroperitoneal abscess following what was evidently a perforated duodenal ulcer, the second might be put in the "idiopathic" class Both patients died, and in both postmortem examinations were made Since Fagge's time the literature of the subject has grown to extensive proportions, and quite a number of comprehensive reviews have been published (by Borchgrevinck, Laffer, Conner, Doolin, Braun and Seidel, Payer and others)

SYNONYMS

Cases of acute postoperative dilatation appear in the literature under a confusing variety of names, which reflect the differences of opinion as to the nature and cause of this complication This is evident from a glance at some of these synonyms, viz, arteriomesenteric obstruction, acute paresis of the stomach, gastroduodenal dilatation, gastromesenteric ileus, postoperative gastric paralysis, and acute paralytic dilatation of the stomach

INCIDENCE

In Fagge's original paper (1873), reference is made, in addition to the two personal cases of the author, to only a few which had been previously mentioned in the literature In 1899, Albrecht [4] had collected eighteen cases, while in 1902 Campbell Thomson [5] had gathered forty-four The study of Conner,[6] in 1907, was based on 102 cases, that of Borchgrevinck,[7] in 1913, on 144 In the most recent review of the subject, Doolin [8] has collected 1,188 cases, and to this number I can add thirty-nine, including the ten reported in this paper, thus bringing the total to 227 These figures, it should be explained, include cases of acute gastric dilatation due to all possible causes, and not only those following surgical operations

The postoperative group, with which alone we are concerned here, constitutes the major portion, about 69 per cent of all cases, according to Doolin Borchgrevinck gives about the same proportion (66 6 per cent) Laffer's [9] was much smaller—only 38 2 per cent

Of the ninety-two postoperative cases embraced in Bochgrevinck's study, seventy-one occurred after laparotomy and twenty-one after extra-abdominal operative procedures The largest proportion (thirty cases) was seen after operations on the female generative tract, gallbladder operations come next with seventeen cases, appendix operations, eight cases, hernia operations, three cases, etc There were six cases in which an operation on the stomach had been performed

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* From the Gynecological Department of Johns Hopkins Medical School

* Because of lack of space this article is abbreviated in THE JOURNAL The complete article appears in the Transactions of the Section and in the author's reprints

* Read before the Section on Surgery General and Abdominal at the Seventy Second Annual Session of the American Medical Association Boston June 1921

1 Muller, P Ueber akute postoperative Magendilatation hervorgerufen durch arteriomesenteriale Duodenal Kompression, Deutsch Ztschr f Chir **56** 486 1900

2 Fagge Hilton On Acute Dilatation of Stomach Guy s Hosp Rep Series 3 **18** 1 1873

3 Brinton William Lectures on Diseases of the Stomach, 1859 pp 343, 348, 353

4 Albrecht P O Ueber arteriomesenterialen Darmverschluss an der Duodenojejunalgrenze und seine ursächliche Beziehung zur Magenerweiterung Virchows Arch f Path Anat **156** 285 1899

5 Thomson H C Acute Dilatation of Stomach New York William Wood & Co 1902

6 Conner L A Acute Dilatation of Stomach and Its Relation to Mesenteric Obstruction of the Duodenum Am J M Sc **133** 245 1907

7 Borchgrevinck O J Acute Dilatation of Stomach and Its Treatment Surg Gynec & Obst **16** 662 1913

8 Doolin W Acute Dilatation of Stomach Brit J Surg **6** 125 (July) 1918

9 Laffer, W B Acute Dilatation of the Stomach and Arteriomesenteric Ileus Ann Surg **47** 390 (March) 1908

—one pyloric resection, four gastrojejunostomies, and one gastroduodenostomy Of twenty extra-abdominal operations, five were on the kidneys, eight on the extremities, one on the face, and six on the thorax Most frequently, in about 60 per cent of cases, the condition is seen in women It may occur at any age The youngest patient, no doubt, was that of Belilios,[10] a suckling infant of 9 months, who was found dead two hours after nursing The postmortem examination revealed the stomach to be "as large as a football" The oldest patient was perhaps that of Moore,[11] the age in this case being 86

SYMPTOMATOLOGY

The clinical picture produced by acute gastric dilatation is fairly distinctive The most prominent symptom is vomiting This, in a large proportion of cases, becomes conspicuous soon after the operation, so that it is commonly looked on as merely the usual postanesthetic emesis In other cases, the onset occurs many days after operation, perhaps long after the patient had recovered from its immediate effects In about one third of Borchgrevinck's postoperative cases (twenty-three of sixty-six) the onset was within the first two days after operation In nineteen patients, vomiting began three days after operation, in five cases, four days, in four cases five days, in one case, sixty-one days, and in two cases seven days The onset has been described as occurring as late as the thirtieth day in one reported case (Jessop), and on the twenty-fourth in another (Borchgrevinck's Case 7) It is a question, however, whether a dilatation appearing so late after operation can fairly be put down as a postoperative complication

The vomiting is characteristically of a regurgitant type, the gastric contents being spit up, as it were, with little retching or straining The vomiting gives little or no relief to the patient, appearing to be only an overflow from the stomach, somewhat analogous to the urinary incontinence of retention

The amount vomited may be small or it may be enormously large In the case of Neck[12] it was 1 5 liters in that of Borchardt,[13] "a half bucketful," while in the case of Miller and Humby[14] the stomach after death was found to hold "five basinfuls" Most frequently the vomited material is greenish or brownish, but it may in the later stages become almost black In a number of reported cases, analyses have been made of the vomited stomach contents Reynier[15] found a hyperchlorhydria in several of his cases, while lactic acid has been found by various observers In one of my cases the gastric analysis showed an absence of free hydrochloric acid

The large amount of vomitus, far exceeding the fluid intake, is very characteristic and is to be looked on as evidence of a marked hypersecretion of the stomach Many years ago (1883) Morris[16] suggested, as a matter of fact, that it is this gastrorrhea which is the cause of the stomach dilatation, a view which is almost certainly incorrect The evidence, as we shall see, indicates that the hypersecretion and the dilatation alike are caused by the same underlying disturbance of gastric innervation

Pain is almost always a symptom, but its severity varies greatly In some cases it has been so excruciating as to make the patient scream, while in others it has amounted to only a feeling of distress in the epigastrium Collapse is noted in practically all severe cases the pulse becoming rapid and thready, the skin cold and moist, the eyes sunken and hollow, the respiration rapid and shallow On the other hand, there are many cases of milder degree in which the general condition of the patient may remain surprisingly good for a considerable length of time Other symptoms emphasized by almost all authors are the great thirst and the scantiness of the urine, both obviously the results of the great loss of body fluid by vomiting

Of the objective findings, probably the most characteristic is the distention of the abdomen This is quite distinctive in its outline, the enlargement occupying chiefly the left side of the abdomen In the milder cases it is chiefly above the umbilical line, but in the extreme instances it may extend far below this, so that most of the bulging is below the level of the navel Durand (quoted by Doolin) mentions a case in which the resonance extended so far up into the thorax that a diagnosis was made of pseudopneumothorax In another case, reported by Brown,[17] a diagnosis of pancreatic cyst was made, after aspirating the tense fluctuating mass in the epigastrium Even at operation the thin-walled cystic mass was looked on as a pancreatic cyst It was evacuated and marsupialized The necropsy disclosed the supposed cyst to be an acutely dilated stomach

DIAGNOSIS

The symptoms which have been detailed, and especially the characteristically located abdominal distention are usually sufficient to suggest the nature of the trouble It is the stomach tube, however which must usually be invoked to make the diagnosis certain Introduction of the tube is followed by the escape of a large amount of gas and fluid, with immediate collapse of the stomach and disappearance of the abdominal distention, thus clinching the diagnosis The amount of material which escapes is always large, the fluid content being most frequently of a dark brown color, resembling root beer In some cases the amount has been huge, as has already been stated

The two postoperative conditions which are most apt to be mistaken for acute gastric dilatation, and vice versa, are peritonitis and postoperative ileus The differentiation will usually be suggested by bearing in mind such characteristics of gastric dilatation as the absence of fever or perhaps the even subnormal temperature, the frequent and copious vomiting of regurgitant type, the characteristic topography of the abdominal distention, the absence of marked abdominal tenderness or rigidity, the absence of marked leukocytosis, and, most important, the striking if temporary disappearance of the distention after the passage of the stomach tube In this connection, Payer[18] has called attention to the fact that when the distention is extreme, the stomach tube will

10 Belilios D A Acute Dilatation of Stomach Without Apparent Cause Brit M J 1 74 (Jan 10) 1903

11 Moore J W Gastro Mesenteric Ileus Report of Two Cases with Autopsy Findings New York M J **105** 544 1917

12 Neck Ueber akute Magenerweiterung und sogenannten arterio mesenterialen Darmverschluss München med Wchnschr **53** 1561 (Aug 7) 1906

13 Borchardt Zur Pathologie und Therapie der Magenvolvulus Verhandl d Deutsch Gesellsch f Chir 33 Congress 1904 Part 2 p 300

14 Miller and Humby Enormously Dilated Stomach Tr Path Soc London 4 137 1853

15 Reynier P Gastric Paralysis Post Operative or Complicating Certain Peritoneal Affections Ann Gyn & Pediat **18** 71 1905

16 Morris The Stomach from a Case of Acute Gastrorrhea or Acute Dilatation of the Stomach Tr Path Soc London **34** 82 1883

17 Brown W H A Case of Acute Paralytic Dilatation of the Stomach Lancet 2 1017 1899

18 Payer A Die postnarkotische Magenlahmung Mitt a d Grenzgeb d Med u Chir **22** 411 1910

not reach to the bottom of the organ, and he therefore advises placing the patient in the elevated hip position before lavaging, thus facilitating the emptying of the stomach

In both peritonitis and obstruction the abdominal enlargement is more diffuse and rounded, and is not appreciably relieved by gastric lavage The amount of vomitus, and of material recovered by lavage, is also commonly much smaller In addition there is usually more or less fever and leukocytosis in peritonitis In postoperative ileus, again, the onset rarely occurs as early as does that of gastric dilatation, pain is more severe, and vomiting is not such an overshadowing symptom Furthermore, ileus most frequently involves the lower portion of the intestinal canal

It cannot be too strongly emphasized that a moderate degree of gastric dilatation is a frequent concomitant of peritonitis, and that it is a more frequent mistake to diagnose acute gastric dilatation when peritonitis has developed than vice versa On the other hand, it is certain that many patients with acute gastric dilatation have died of what has been called peritonitis, or postoperative ileus

PROGNOSIS

Acute operative dilatation of the stomach may be classed as one of the grave surgical complications In former years, when it was so commonly unrecognized, the mortality was very high indeed, but as surgeons are learning to recognize and treat the complication earlier the mortality is showing a gratifying decrease from year to year Neck's figures, in 1906, gave a mortality rate of 73 43 per cent , Laffer, in 1908, gave 63 5 per cent , Payer, in 1911, gave 53 43 per cent , Borchgrevinck (1913), 54 1 per cent The latter emphasizes, however, that of eighty cases in his series reported after 1907, the death rate had decreased to 36 2 per cent No tendency to spontaneous cure has been noted Of thirty-one treated medically or untreated, twenty-nine died

It is interesting to speculate—for it must remain a speculation—as to what would have been the outcome in the cases recognized during operation, in a number of which, as in my Cases 1 and 2, the stomach showed no tendency to redilate when the patient left the table Had such a case escaped attention at the time, or had the dilatation occurred after closure of the abdomen, would it have gone on to the production of the familiar picture of serious and perhaps fatal dilatation? There seems little reason to doubt that this would have been the case

GASTRIC DILATATION DURING OPERATION

Altogether I have collected thirteen cases of gastric dilatation observed during operation, including the two of my own appended to this paper (Cases 1 and 2) In almost all of these, Moorhead,[19] Richardson,[20] Mayoral,[21] Luckett[22] (two cases), Lee,[23] Harrigan[24] (two cases), Doolin, Reardan[25] (three cases) and Novak (two cases), the prompt passage of the stomach tube (in Doolin's case puncture with a scalpel) brought quick relief from this distention, with little or no disturbance after the operation The only exception to this good record is encountered in the case of Lee, in which redilatation of the stomach took place during closure of the incision, following a posterior gastro-enterostomy for perforating duodenal ulcer Death occurred very soon after, before the patient left the table The postmortem examination revealed enormous dilatation of the stomach As Lee himself seems inclined to think, there may have been other factors in causing this patient's death Certainly it would be most unusual for acute dilatation of the stomach to cause death within a few minutes

ETIOLOGY AND MECHANISM

Perhaps the most interesting problem in connection with the subject of acute gastric dilatation is as to the cause and mechanism of the condition Around this question there has arisen, as Doolin says, a "riot of theories" Of these the two which have been most prominent are (1) the theory of duodenal occlusion by the upper border of the mesentery, with the contained superior mesenteric vessels, and (2) the theory of paralysis of the muscular wall of the stomach

The conception that acute gastric dilatation might be due to shutting off of the duodenal lumen by the mesenteric vessels originated with Rokitansky,[26] in 1863 No case illustrating this form of mechanism seems to have been described, however, until 1891, when Kundrat[27] reported three such cases, all fatal, in a paper with the title "Concerning a Rare Form of Intestinal Incarceration" Postmortem examinations were made in two of these three cases, and both revealed enormous dilatation of both stomach and duodenum Another case of similar type was reported in 1895 by Schnitzler,[28] who first suggested the postural form of treatment which has since become so popular Byron Robinson,[29] in 1893, endorsed the views of Rokitansky in a paper based on many dissections Bloodgood,[30] Muller and many others have contributed articles bearing on this general view

There are different opinions as to the exact mechanism by which the duodenum may be compressed by the upper border of the mesentery According to some the important factor is a sinking into the pelvis of the intestinal coils, thus causing traction on the mesentery and stretching it, as it were, over the horizontal portion of the omentum Others, again, are inclined to believe that the overdistended stomach presses downward on the mesenteric root and thus causes the duodenal occlusion which, in turn, precipitates the acute dilatation, thus completing the vicious circle

There are many objections to the theory of duodenal occlusion, which up to a few years ago was perhaps the most widely accepted of all These may be thus summarized

1 Duodenal dilatation, while a frequent concomitant of gastric dilatation, is not by any means a constant one, occurring in noticeable degree in only 25 per cent

19 Moorhead E L Acute Dilatation of Stomach During Anesthesia J A M A **52** 1996 (June 19) 1909

20 Richardson W E A Case of Acute Dilatation of Stomach Occurring in the Course of an Operation for Duodenal Ulcer Brit M J **2** 1202 1913

21 Mayoral Antonio Report of a Case of Acute Dilatation of the Stomach, J A M A **64** 146 (Jan 9) 1915

22 Luckett, W H Visible Acute Dilatation of the Stomach During Laparotomy J A M A **64** 2055 (June 19) 1915

23 Lee, B J Acute Operative Dilatation of Stomach Ann Surg **63** 418 (April) 1916

24 Harrigan A H Acute Dilatation of Stomach Ann Surg **69** 510 (May) 1919

25 Reardan F B Acute Dilatation of Stomach Report of Six Cases, Three Occurring During Anesthesia California S J Med **15** 253 (July) 1917

26 Rokitansky Lehrbuch der pathologischen Anatomie, Ed 3 1863, Vol III

27 Kundrat Ueber eine seltene Form der inneren Inkarzeration Wien med Wchnschr **41** 352 1891

28 Schnitzler Ueber mesenteriale Darmincarceration, Wien klin Rundsch **9** 579 1895

29 Robinson Byron Dilatation of Stomach from Pressure of the Superior Mesenteric Artery Vein and Nerves on the Transverse Segment of Duodenum Cincinnati Lancet Clinic **45** 577 (Dec 8) 1900

30 Bloodgood J C Acute Dilatation of Stomach Gastric Mesenteric Ileus, Ann Surg **2** 736 1907

(Doolin) Conner gives the proportion of cases in which a whole or a part of the duodenum is dilated as 38 per cent

2 There is only one case in the literature, that of Baumler,[31] in which the obstruction seems to have been sufficiently definite as to cause any marked constriction of the duodenum In this case the postmortem examination disclosed a reddened groove, 2 cm in width, on the upper surface of the bowel, after a release of the constriction

3 It would be impossible for duodenal occlusion to cause such a very sudden dilatation of the stomach as has been noted in a number of cases, which have been observed during operation Two personal cases, of this type, are described at the end of this paper

4 As a matter of fact, in the few cases of very high intestinal obstruction which have been reported in the literature as a result of various causes, dilatation of the stomach has not been, by any means, a characteristic or even a common symptom Genuine duodenal obstruction, as by tumors, bands, etc , is characterized by a more sudden onset than acute gastric dilatation, by pain which is more intense, by earlier prostration, and by the fact that vomiting, while it occurs, is apt to be less constant and less copious than with acute dilatation of the stomach This is well illustrated in the case reported by Harrigan, in which volvulus of the stomach occurred as a result of incarceration of the upper jejunum in the fossa of Treitz An important point in the microscopic picture was the fact that the stomach was "extremely swollen, red, congested, as in the case of a loop of obstructed intestine in a strangulated hernia" In the case of the ordinary postoperative dilatation, on the other hand, the stomach is thin walled, without congestion or other evidence of interference in circulation Bloodgood reported four cases of high intestinal obstruction, but in none of these was noteworthy dilatation of the stomach found at operation or postmortem Borchgrevinck, again reports a case of acute duodenal obstruction by a gallstone, and emphasizes that in such cases there is an "absence of both gastric ectasy and the clinical picture of the acute dilatation of the stomach"

5 Acute dilatation is rare after childbirth, when the intestines might be expected to gravitate into the pelvic cavity after the delivery of the child, and thus, according to the views quoted above, cause mesenteric constriction of the duodenum

6 A sine qua non of the duodenal occlusion theory, as Conner says, is the assumption that the small intestine sink into the pelvis, and thus make traction on the mesentery And yet, in my two operative cases (Cases 1 and 2) the stomach dilatation took place when the patient was in the Trendelenburg position

7 If the duodenal conclusion were a factor of much importance, there would exist an almost perfect indication for the performance of gastro-enterostomy As a matter of fact, this operative measure, like most others that have been done, has been notoriously unsuccessful in its results

8 Were there a definite mechanical occlusion of the duodenum, it would be hard to explain the fact that a large proportion of patients, certainly more than a half, have recovered by the simple use of the stomach tube, without operation and without postural treatment

9 Acute gastric dilatation has occurred in a number of cases after the operation of gastro-enterostomy My own Cases 3 and 5 are examples of this type of case Similar observations have been made by others

31 Baumler Ueber akuten Darmverschluss an der Grenze zwischen Duodenum und Jejunum Munchen med Wchnschr 1 657 1901

THEORY OF GASTRIC PARALYSIS

In 1859, Brinton [3] first suggested that acute gastric dilatation is the result of a disturbed innervation of the stomach wall, with consequent paresis I can do no better than give his own words, which express so well the trend of modern opinion

> It is evidently a lesion of the nervous tissue connected with the stomach a lesion which, whether structural in the sense of being recognizable by the aided or unaided eye, or merely what our ignorance conveniently terms "functional," prostrates (often apparently paralyses) the stomach in all its tissues and in all their offices Its mucous and muscular coats its secretion and motion, respectively, are alike interfered with nay, more, those muscles of the locomotive system which are linked with the contractile tissues of the stomach in the ordinary act of vomiting are also affected In short it is not merely the sympathetic, but the cerebrospinal center which is injured or deranged—a fact which seems to concur with the violent pain and general prostration in pointing to the prevertebral center (or solar plexus) of the former or to the pneumogastric trunks of the latter, as the parts chiefly affected

This theory has since then had the able support of many who have written on the subject, although it was for a period of years somewhat eclipsed by the theory of arteriomesenteric occlusion of the duodenum, already discussed A few elementary facts in connection with the physiology of motor activity of the stomach may be mentioned, so far as they bear on the question under discussion The extrinsic nerves of the stomach are, of course, the vagus and the splanchnics The former are commonly looked on as being chiefly motor, and the latter as chiefly inhibitory It was long ago shown, first by Carion and Hallion,[32] that section of the vagi in animals results in acute dilatation of the stomach Many of the animals thus operated on exhibited symptoms suggesting uremia, these being explained by absorption of the toxins from the distended stomach, as in the case of gastric tetany This observation is of peculiar interest to me in that one of my cases (Case 7) was characterized by what seems to have been a typical attack of tetany involving the upper extremities I have encountered no similar case in going over the literature A demonstration of the effect of vagus section was unwittingly made in the human being by Hartwell,[33] who observed acute gastric dilatation following the accidental severance of the vagus nerve during a difficult thyroidectomy

That abdominal injury or manipulation may reflexly produce gastric paralysis is certainly no more remarkable than that a pithed frog's heart may be made to stop in diastole by mere light tapping on the frog's abdominal wall with the handle of a scalpel Of the same general type is the atony of the bladder, with retention of urine, seen so frequently after operations about the perineum or arms Similar, also, is the sudden extreme local paralysis of the uterine wall observed occasionally during curettage, to the dismay of the gynecologist for

32 Carion and Hallion Dilatation de l estomac par section des nerfs vagues Bull med de Paris 9 809 1895

33 Hartwell J A Discussion on Paper by Moschcowitz Ann Surg 55 615, 1912

the relaxation is so extreme that no resistance to the curet can be felt, and the operator fears that the uterus may have been perforated

In the case of gastric dilatation the afferent impulse may have its origin elsewhere than in the abdominal cavity, as observed, for example, in those cases which follow injuries to the extremities In the nonsurgical cases, again, the mechanism would seem to be a purely local one It is scarcely worth while, in the present state of our knowledge, to speculate as to whether the reflex has to do chiefly with an inhibition of the vagus or a stimulation of the splanchnics Nor can we as yet determine the relative importance of the roles played by these extrinsic nerves, on the one hand, and, on the other hand, by the local nerve mechanism of the stomach, i e, the plexuses of Meissner and Auerbach All in all, however, it may be said that the weight of evidence is rather overwhelmingly in favor of the paralytic theory of postoperative dilatation of the stomach, that this theory, more than any other, explains the varied immediate etiology of the condition, and that it alone would seem to explain those rapidly occurring dilatations occasionally observed during operations

THE SOURCE OF THE GAS IN THE STOMACH

In most cases the distention of the stomach is gaseous In the early cases, such as these observed at operation, the contents of the stomach are usually entirely gaseous It is probable that the enormous amounts of fluid which later are evacuated from the stomach are the results of a hypersecretion which, like the muscular paralysis, is the result of a disturbance in innervation There has been much discussion as to the source of this gas For that matter, there is much doubt as to the origin of the gas normally contained within the stomach As to its physiologic importance, there can be little question

Cannon[34] concludes from his experimental studies that "gastric peristalsis results from tension produced by internal pressure acting on the tonically shortened gastric musculature, for (1) distention of the inactive stomach causes peristalsis when the musculature is tonically controlled, but not when it is relaxed, (2) considerable intragastric pressure (sustained tension) prevails in the stomach manifesting peristalsis, (3) within limits peristalsis is augmented or weakened as intragastric pressure is experimentally increased or decreased" The significance of these observations, if they be applied clinically, lies in the fact that they seem to explain the persistence of the gastric paralysis and distention, once they have been produced The observation that the greatly increased intragastric pressure resulting from the dilatation inhibits motility is supported also by Barber[35]

ANESTHESIA

There has been much discussion as to the part played by the anesthetic in the production of acute postoperative dilatation of the stomach The fact that many cases are recorded in which dilatation has occurred in nonsurgical conditions, i e, when an anesthetic has not been given, is conclusive evidence that anesthesia is not an all-important factor in the production of the condition On the other hand, there is much reason to believe that it is a predisposing factor of considerable importance The most interesting study of this matter, and one which has apparently been more or less overlooked, is that of Payer This investigator, as a result of observations in 300 cases, concluded that in nearly all patients, after anesthesia, there could be demonstrated a significant degree of gastric atony The greater curvature not infrequently is found to extend to the umbilicus, or even considerably below this As a rule this stomach paresis disappears within from twelve to twenty-four hours Especially interesting is Payer's statement that the severity of postanesthetic vomiting is directly dependent on the degree of gastric atony which occurs The critical period, he says, occurs on the third to the fifth days, when solid feeding is ordinarily begun Since becoming interested in this question I have, whenever possible, noted the condition of the stomach during abdominal operations, and I have been impressed with the frequency with which moderate though perhaps clinically unimportant degrees of gastric atony are noted

CLASSIFICATION OF TYPES

From what has been said, it would seem that two principal varieties of acute postoperative dilatation of the stomach may be distinguished, a primary and a secondary

Primary—Since the immediate cause of the gastric dilatation appears to be a disturbance of gastric innervation, it would seem that the most common form of the complication is precipitated by the operative procedure, whatever that may be This is certainly the logical assumption in those cases which have occurred during operation

In some of the cases, as in my Case 1, the dilatation occurred almost instantaneously, the whole process being a matter of seconds No other explanation seems possible than that there has been a sudden reflex paralysis of the stomach wall The only other factor which can be thought of in a causative way is that of the anesthetic, although this is perhaps of importance only as a predisposing factor This is indicated by the not infrequent cases in which no anesthetic has been used, and also by the fact that the relaxing effect of the anesthetic would probably be much more gradual than is sometimes the case

As to the postoperative cases, which of course make up much the larger proportion, it is obviously even harder to fix the mechanism than in those which occur directly under the eye It seems logical to assume that in many instances, always of course excluding those associated with peritoneal sepsis, the mechanism is not unlike that of the cases observed during operation Furthermore, there is no doubt that many cases of so-called postoperative dilatation have really had their beginning during the operation, at which time they were not detected In such cases the vomiting occurring after operation is construed as the ordinary postanesthetic emesis, and it is not until the patient's condition becomes grave, perhaps, that the true nature of the trouble is appreciated

Secondary—(*a*) Septic One of the most distended stomachs I have ever seen was observed in a recent necropsy on a patient who was admitted to the hospital three days after forceps delivery by a physician in the patient's home She died shortly after admission of a violent streptococcus peritonitis There was an enormous distention of the abdomen, exaggerated, no doubt, by the extreme atony of the abdominal walls consequent to the recent pregnancy At the postmortem examina-

34 Cannon W B The Nature of Gastric Paralysis Am J Physiol **29** 250 1911 1912

35 Barber W H Gas and the Motility of the Surgical Stomach Ann Surg **69** 271 1919

tion, the entire intestinal canal was ballooned to a most unusual degree, from the cardia to the rectum The stomach distention was only a part here of the general gastro-intestinal paresis, the latter, in turn being the result of the violent peritoneal infection The point I wish to emphasize, in other words, is that dilatation of the stomach is not infrequently an incident in the picture of peritonitis, and may even be the dominant clinical manifestation It is in such cases as these, for example, that gastric lavage and postural treatment are apt to be unsuccessful, the patient succumbing to the peritoneal infection Paralytic ileus of the intestine is, of course, a frequent result of peritonitis, and is commonly explained as due to the paralytic effect of the toxins on the intestinal walls The same explanation suggests itself for the gastric dilatation seen in these cases, the gastric paralysis being perhaps due to the directly injurious effect of the bacterial poisons on the local nerve apparatus in the stomach—the plexuses of Meissner and Auerbach

(*b*) Obstructive Little further need be added with regard to the supposed role played by occlusion of the duodenum by the upper border of the mesentary Suffice it to repeat that the evidence indicates that such obstruction, if it occurs, is almost always secondary to the gastric dilatation Reasoning *a priori*, it seems incredible that the relation of the mesentery to the duodenum should leave such a small factor of safety that a mere gravitation of the small intestines into the pelvis, such as must occur in every individual when standing, could precipitate a life-endangering obstruction of the bowel The various arguments against this theory have already been presented, however, and I am inclined to think that this factor is of little or no importance in the etiology of postoperative dilatation of the stomach It is true, of course, that in the rare cases of high intestinal obstruction, acute dilatation of the stomach may sometimes be observed as a late symptom, but this, after all, is not the question under discussion

TREATMENT

Treatment of acute postoperative dilatation of the stomach, to be successful must be instituted early There are few postoperative complications in which prompt recognition is so important to the patient The diagnostic features of the condition have already been discussed The two principal measures for the relief of the gastric dilatation may be discussed briefly as follows

Gastric Lavage—The stomach tube has saved the lives of many patients who have developed postoperative dilatation of the stomach This fact has not always been appreciated, for, as has already been stated, many a case of gastric dilatation has been wrongfully diagnosed as peritonitis Fortunately, however, the stomach tube has often been used just the same, to the advantage of these patients Certainly gastric lavage should be carried out in every case of postoperative dilatation, first for diagnostic and later for therapeutic purposes In some the distention of the stomach is so great that the tube must be introduced much farther than usual in order to evacuate the contents Payer has advised the employment of lavage in the elevated hip posture, in order that advantage may be taken of the factor of gravity in facilitating complete evacuation of the stomach The frequency with which the lavage is to be carried out depends on the amount of gas and fluid evacuated This, as has been seen, is often very great, owing to the extreme degree of hypersecretion present in many cases In such cases, lavage is often necessary at intervals of every few hours When the lavage treatment is instituted early, the results are as a rule very gratifying, when begun late, the treatment may prove of little avail According to Borchgrevinck, in forty-eight cases treated by lavage alone, twenty-four patients got well, and twenty-four died The latter group undoubtedly, however, embraced some late and some complicated cases

The Postural Treatment—Originally suggested in 1895 by Schnitzler, the treatment of postoperative gastric dilatation by the postural method has been carried out in a large number of recorded cases It is based, of course, on the theory that the dilatation is the result of duodenal occlusion by the mesentery, and that this can be relieved by placing the patient in the prone or knee elbow position, thus lifting the intestine and mesentery off the duodenum, as it were The results reported from the method have been, in the main, favorable, although it is by no means invariably successful in the relief of the symptoms The method is still employed, even though, as we have seen, there is little doubt as to the incorrectness of the theory on which it is based It was used in two of my cases with satisfactory results In one case the relief given to the patient by being placed in the prone position was immediate and striking, in the other it was less pronounced but quite definite

The good results of this position are not to be taken as a proof of the correctness of the duodenal occlusion theory Certainly the evacuation of the stomach by vomiting is prompted by the assumption of these postures irrespective of the presence of a mechanical block in the duodenum It should furthermore be mentioned that in many of the cases in which postural treatment was resorted to, gastric lavage was employed synchronously Aside from the prone and the knee elbow position (Baumler) recommended by Schnitzler, other forms of postural treatment have been suggested Robinson and Muller recommend placing the patient on the right side to facilitate emptying of the stomach into the bowel Payer, indeed, advises placing all patients of the right side after operation as a prophylactic against this complication Kelling's[36] suggestion, on the other hand, is to place the patient on the left side, thus overcoming the valvelike closure of the cardia to which he attributes the dilatation This conception is probably erroneous, and the Kelling posture is not to be commended Finally, allusion has already been made to the apparently worth-while recommendation of Payer, to place the patient in the elevated pelvic position during lavage, in order to empty the stomach more completely

Operative Measures—From the standpoint of both rationale and of clinical results, I believe it may be stated that there is no place for operative measures in the treatment of acute dilatation of the stomach Various forms of operation have been done in an effort to relieve the condition, but the results have been so unfavorable as not to justify them Doolin found that of thirty-one patients operated on, only eight recovered The following operations were done in this series gastrotomy, six cases, with five deaths, gastrostomy, seven cases, with six deaths, gastro-enteros-

36 Kelling G Ueber den Mechanismus der akuten Magendilatation Arch f klin Chir **64** 393 1901

tomy, seven cases, with four deaths, jejunostomy, one case, one death, exploratory laparotomy, eight cases, five deaths

CONCLUSIONS

1 Acute postoperative dilatation of the stomach is an important and dangerous surgical complication which is probably less infrequent then is generally believed

2 Its early recognition is of vital importance to the patient, for on it, to a large extent, depends the success of treatment

3 The use of the stomach tube is the most important means of diagnosis

4 Especially important is the differentiation between gastric dilatation, on the one hand, and peritonitis or postoperative ileus, on the other

5 Dilatation of the stomach is a frequent concomitant of peritoneal infection

6 The evidence points strongly to gastric paralysis as the immediate cause of the dilatation

7 In the primary cases, such as those occurring during operation, the gastric paresis is explainable as a simple reflex In the secondary cases, the dilatation is the result of septic factors, although it is possible that occlusion of the upper intestine may in rare cases be the primary factor

8 The two important therapeutic measures are gastric lavage and the postural treatment advocated by Schmitzer The latter is incorrect in theory, but often successful in its results

9 There is no place for operative measures in the treatment of acute postoperative dilatation of the stomach

REPORT OF CASES

The ten cases reported below are taken partly from my own surgical work and partly from the records of the gynecologic department of the Johns Hopkins Hospital For the privilege of including the latter group I am indebted to Dr Thomas S Cullen, the head of the department

CASE 1—A woman, aged 29, was operated on in my service at the South Baltimore General Hospital, Nov 12, 1919, the operation consisting of modified Gilliam suspension and the separation of abdominal adhesions following an appendectomy performed elsewhere seven years before There was nothing of significance in the past history except that the patient had had some digestive trouble for a number of years (belching, occasional discomfort after eating, etc), apparently as a result of marked visceroptosis There had been severe dysmennorrhea and backache since the birth of a child, four years previously During the course of the operation the stomach suddenly became tremendously dilated so that it filled the whole upper abdominal cavity and pushed down into the incision, which was a suprapubic one The enlargement was easy to observe, for no packs had been used, the patient being in the Trendelenburg position There was only slight acceleration of the pulse rate, and no swallowing efforts were observed by the anesthetist Within a very short time, certainly less than thirty seconds, the stomach had reached an enormous size A stomach tube was promptly passed causing instantaneous collapse of the organ Within eight or ten minutes the dilatation again occurred in exactly the same way and was again relieved by the stomach tube There was no further recurrence of the distention, either during the operation or during the period of convalescence, which was uneventful

CASE 2—A woman, aged 43, underwent supravaginal hysterectomy and perineorrhaphy, March 7 1921 at the South Baltimore General Hospital, because of uterine myomas and relaxation of the vaginal outlet The operation itself was a simple one While the uterus was being removed the patient's respiration became somewhat embarrassed, the pulse somewhat accelerated and the face slightly cyanotic The breathing was for a few moments irregular and interspersed with gulping efforts, apparently at swallowing The stomach became enormously distended so that its lower border extended well into the suprapubic incision The distention was promptly relieved by the passage of a stomach tube, and there was no subsequent recurrence of the phenomenon, although the stomach remained rather atonic There were no gastric disturbances during the convalescence

CASE 5—May 1, 1916, a posterior gastro-enterostomy was performed at the Mercy Hospital on a man, aged 52, the symptoms having been present for eighteen years The operation was rather more difficult than usual, owing to the fact that there was great fatty infiltration of the omentum and that the patient took the ether badly The condition at the close of the operation, however, was quite satisfactory There was considerable postanesthetic vomiting and on the second day the upper abdomen became tense and rounded The vomiting soon became incessant and was of the regurgitant type, the patient literally spitting up great quantities of root-beer colored fluid which seemed to overflow from the stomach There was great epigastric distress, and the patient's condition soon became alarming, with extreme prostration, cold, moist skin, rapid pulse and subnormal temperature Lavage was repeatedly carried out each time bringing away great quantities of the same dark brownish material which was being vomited In spite of the desperate condition to which the patient was reduced, he began to show improvement on about the fourth day after the operation In addition to the repeated lavage, he received large quantities of fluid by rectum and under the skin together with vigorous stimulation, until he had been tided over the worst of his trouble Improvement was gradual, the later convalescence being uninterrupted

CASE 8—A woman (Gyn No 18557), aged 35 on whom a right nephrectomy was performed at Johns Hopkins Hospital, Aug 1, 1912, had persistent emesis after the operation which became marked August 4 At one time 800 c c of greenish fluid was vomited The pulse varied between 120 and 130 and was weak The stomach extended below the umbilicus On lavage the organ contained at least 1,000 c c of fluid The vomiting continued in spite of treatment the patient growing progressively weaker, and death took place August 10

ABSTRACT OF DISCUSSION

DR. F B TURCK New York For the last twenty-five years I have been making experiments on shock, shock produced in animals by tissue extracts from the animals, specific to the animals In a large percentage of these cases, acute dilatation of the stomach always supervenes on the intravenous injection of autolyzed tissues that are homologus to the animal At once changes in all the muscle cells, akin to what is known as fatigue of the muscles is produced Examination of frozen sections shows that this is due to absorption of "tissue toxin," which is liberated during a surgical operation and by anesthesia The shock toxins caused the same pathologic condition Small injections of tissue burned to ash produced chronic states Thus we actually produced acute, subacute and chronic dilatations

DR ALBERT J OCHSNER, Chicago A symptom which is the one that the nurses recognize first is the effect of the dilatation on the heart The heart is displaced The nurse notices that the heart has "gone bad' and thinks that something has happened but does not recognize the cause In regard to prophylaxis For many years we had occasional cases of acute postoperative dilatation of the stomach Now we have a standing order that the moment a patient vomits, or is nauseated or complains of gas pressure, gastric lavage is made with water at a temperature of 105 F The heat stimulates contraction of the stomach and cleanses it of any jejunal contents which may have regurgitated into the stomach For the last fourteen or fifteen years since this routine has been followed, we have had no further cases of dilatation Placing

the patient across the bed on the face is the first thing the nurse should do, then the stomach tube is passed and the stomach washed out

DR P B SALATICH, New Orleans I have been unfortunate enough to lose two cases of acute dilatation of the stomach It is important to recognize the condition early A patient operated on by another surgeon for a ruptured appendix got along all right for forty-eight hours, and then developed tremendous distention of the abdomen Everybody thought the patient had peritonitis and the family was informed that the case was hopeless I saw the case in consultation and recognized it as an acute dilatation of the stomach After gastric lavage the patient soon felt comfortable and went on to recovery I examine the urine every day, and when casts appear that is a bad sign Twelve hours before death the urine will contain many casts Suppression takes place and then the prognosis is always bad

DR EMIL NOVAK Baltimore The slides shown illustrate very well the characteristic topography of the abdominal enlargement in these cases, especially the prominence on the left side In extreme cases the apex beat of the heart may be pushed well upward and to the left As to the theory of the postural treatment The purpose of placing the patient in the prone position is to unload the small intestine, as it were, from the duodenum In the two cases I reported of acute dilatation occurring during operation, the patient was in the Trendelenburg position, with the small intestine well up in the abdomen, so that this factor of duodenal occlusion could scarcely have been of any importance Whenever possible I perform pelvic operations without using abdominal packs, the abdomen being opened in the Trendelenburg position after the patient has been anesthetized thoroughly It was, therefore, possible to observe the progress of the dilatation very clearly Physiologists tell us that many points concerning the motor physiology of the stomach have not yet been cleared up, hence it is not surprising that the mechanism of acute dilatation is still rather obscure The explanation suggested by Dr Turck lacks confirmation It illustrates the multiplicity of hypotheses concerning the mechanism of this phenomenon

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TREATMENT OF CHRONIC NEPHRITIS WITHOUT EDEMA

AN EVALUATION OF METHODS *

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Chronic nephritis can be divided sharply into two groups, the type with edema, and that without edema The former is often the direct and evident result of bacterial invasion and may perhaps be regarded as a form of subacute nephritis The latter possesses a more elusive etiology, and yet is the more frequent, it is of this disease that I write

Chronic nephritis without edema is not a disease of the kidney alone, for in the resulting disturbed physiology other organs, notably the heart and arteries, play an equally important part, and in last analysis it is the efficiency of these other organs which determines as a rule the fate of the patient Dependence on the urinary findings alone frequently leads to error Many individuals will show albumin and casts in the urine for years without other signs of nephritis, while at the same time they demonstrate their ability to withstand without injury all sorts of fatigue and hardship Such people cannot be said to have nephritis, they require no treatment

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TREATMENT OF THE PATIENT AS A WHOLE

The patient should be studied as a whole His general appearance, his sense of well-being, his emotional stability, his reaction to physical exercise and mental strain, his vision, his digestion, and his maintenance of body weight, all warrant attention In addition such general information as that gained from certain laboratory tests, when it is taken in the proper clinical setting, is of definite value For example, the phenolsulphone phthalein output is a fairly dependable criterion of kidney efficiency This test also possesses the great advantage of simplicity Of still greater value, but not so readily available, is the chemical analysis of the blood Early in the disease the blood usually shows increased amounts of sugar and uric acid, later there occurs a gradual increase in the blood urea, and lastly, when uremia is imminent, the creatin begins suddenly to rise The prognostic as well as the diagnostic value of these blood changes is evident

More important still, because of its wide applicability, is the knowledge to be gained from observing the quantitative behavior of the urine When a person is obliged to get up at night to urinate, or when the night urine is found to exceed 600 c c, chronic nephritis should be suspected The question "Do you get up at night to pass your urine?" should be asked every patient In line with this is the changed behavior of the specific gravity Instead of fluctuating from time to time, the specific gravity of the urine, which is lower than normal in this disease shows a tendency to become fixed, and in this respect the several specimens passed at two-hour intervals all show a striking constancy Simple as it is, indeed, because of its very simplicity, this two-hour test, of all others, is the most important

In the treatment of chronic nephritis the first effort, here as elsewhere, is to remove the cause This is difficult, and since we still are in the dark as to ultimate etiologic factors, it is in most instances impossible The vogue of indiscriminate tonsillectomy and tooth extraction is on the wane I would not inveigh against the removal of definitely diseased tonsils, for it is not improbable that years of infected tonsils will cause chronic nephritis Before advising removal of the tonsils, however, we should first satisfy ourselves that they are infected, and, secondly, we should take into consideration the influence of such an operation on an organism which, with no remaining factor of safety, is already tottering under a heavy load The same applies to oral sepsis Diseased gums must be treated and genuine apical abscesses eradicated, but there is nothing to justify the removal of a tooth merely because it is pulpless Not only should the patient's comfort be considered before his teeth are extracted, but the dangers incident thereto should be carefully reckoned I have seen a man go into fatal uremia following the extraction of one tooth

In the treatment of the disease as in its diagnosis, attention should be devoted to the patient himself rather than solely to his kidneys The character of his work and his manner of living often need correction He should be taught to readjust himself to the new conditions under which he is to live and to reconcile himself to the necessary limitations The amount of work should be so regulated that the physical and mental strain under which he labors is reduced to

to a minimum, and to this end I have found it an excellent plan to insist that following the midday meal each day the patient take an hour's rest. A definite amount of recreation is essential. Frequent vacations are advisable, and at times a long rest away from home is necessary in order to enable the patient to regain his equilibrium. Violent exercise is bad, but moderate exertion well within his capabilities is beneficial. Walking is excellent, I know of nothing better than golf.

The amount of fluid permitted these individuals varies according to the physician's bias and the degree of his adherence to the teachings of the past. The rigid restriction sometimes advised with a view of reducing the blood pressure often does harm. On the other hand no good can be accomplished by giving such patients the enormous quantities of water sometimes prescribed, while real injury may be wrought. A moderate daily amount of fluid is advisable, say between 1 and 2 quarts.

REGULATION OF THE DIET

Diet is a traditionally important factor, but the strict limitations imposed in the past, particularly as regards meats, are not warranted. I doubt whether such rigid restrictions ever accomplish good, they often do harm. The keynote of the dietary should be moderation. The total calories should be low and yet so balanced and of sufficient amount to keep the patient alive and relatively fit through the months and years of his expectancy. He is frequently told that he must eat no meats, above all must he avoid red meats, and at the same time he is advised that *the breast of chicken is relatively harmless*. Let me remind you that the patient must have at least his minimum of protein, and that as far as his kidneys are concerned there is not the least difference between beefsteak and the breast of chicken, pound for pound, each imposes an equal burden on these organs.

An appropriate diet for the average individual with chronic nephritis contains from 50 to 75 gm. of protein and a sufficient amount of other foods to give a daily intake of about 2,500 calories. One small helping of any meat, together with one egg per day, when added to the protein contained in the other foods is sufficient. The patient with chronic nephritis can with safety be permitted this amount of meat. To give him much less will surely in the course of months or years mean an appreciable loss in strength and vigor.

Precision in feeding does not require that the patient keep before him a pencil and paper and a table of food values. It does demand, however, a little thought such as any one is capable of giving. It is well to place in his hands some little book on food values to which he may refer when necessary, such for instance as that written by Locke, or Bulletin 28 of the Department of Agriculture. Both physician and patient can in a short time familiarize themselves with approximate food values, and for the patient it becomes a simple matter after a little coaching to arrange his own menu. There is nothing cryptic about this, merely a little trouble.

The character of the other foods is likewise of importance. Meat broths contain extractive substances which are of no food value and yet which must pass through the kidney, therefore they should be definitely interdicted. It seems needless today to speak of the dangers of alcohol. Emphasis should be laid on the entire elimination from the dietary of all condiments, and in order to spare not merely the kidneys but the digestive organs as well the food should be simple and plain.

Chlorid restriction in nephritis has received a great deal of attention, yet its efficacy in the type under consideration is still a matter of discussion. Allen has advised most drastic chlorid restriction and has even suggested the possibility that sodium chlorid is the long sought for poison of uremia. He states that the rigid restriction of the patient's salt will greatly reduce the blood pressure and in other ways achieve material benefit. In my own recent studies the almost total elimination of sodium chlorid from the diet for a limited period failed in most instances to reduce materially the blood pressure or to influence definitely the course of the disease. I am led to believe that the excessive use of salt does real harm and that its restriction does good, but I have not found that rigid restriction, such as Allen advises, accomplishes *anything more than the benefits which follow the dietary* limitations ordinarily imposed. I should perhaps add that the almost absolute restriction of sodium chlorid for a period of two weeks has in certain instances appeared to depress the patient to a dangerous degree. I would conclude that it is sufficient to say to the patient that he must eat no food which contains an unusual amount of salt, and that he must add no salt to his food after it comes to the table. If he follows this admonition his salt intake will be reduced to about 2 gm. per day, an amount which I believe is within the limits of safety.

OTHER MEASURES

The condition of the gastro-intestinal tract sometimes influences the course of chronic nephritis, and for this reason it is essential that the patient secure a good daily bowel movement. Foods containing a large amount of vegetable fiber are helpful to this end, but with many patients the frequent administration of a mild saline purgative is advisable. The large doses of mercury sometimes administered as calomel must do harm to the kidney, and I would warn against the frequent and continued use of this drug.

Baths and sweats aid elimination. Sweats obtained by hot packs and by various other physical means are sometimes beneficial, and particularly is this true in the more advanced stages of the disease.

It scarcely seems necessary to speak of diuretics in a disease in which diuresis is an outstanding symptom. When the kidney is already working to its full capacity and is secreting an abundance of urine, diuretics can only do harm. The more we know of nephritis, whatever the type, the more cautious do we become in the use of diuretics.

Uremia in chronic nephritis is of grave consequence, for if it is not fatal in the first attack it is likely to repeat itself, and eventually it will carry off the patient. Threatened uremia sometimes can be averted by putting the patient to bed with purgation and sweating. Most effective is venesection. Enough blood should be taken to accomplish appreciable good, and for the average individual this means not less than 600 c.c. At this point I should like to warn against the practice of administering physiologic sodium chlorid solution after venesection. If fluids cannot be taken by mouth, sufficient plain water should be administered by rectum, and the patient will thus be spared the dangers incident to the ingestion of a large quantity

of sodium chlorid Following the bleeding, quiet and absolute rest in bed for a period of two or three weeks is advisable During this period the patient should be given mild purgation and should receive a limited amount of food

SUMMARY

The patient with chronic nephritis without edema should be studied as a whole and treated as a whole He should be permitted a fairly well balanced low calory diet with small amounts of meat and very little salt, and lastly, his entire life should be so reordered as to obtain for him an abundance of rest, some peace of mind, and a fair amount of play

AN AUTOMATIC METHOD FOR SERIAL BLOOD PRESSURE OBSERVATION IN MAN*

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It is well known that blood pressure in man fluctuates rapidly and widely in health and in disease With due allowance for inherent inaccuracy of instruments and observers, still these many variations in blood pressure are hard to understand Psychic factors are known to have their effect, but they are difficult to evaluate The influence of sleep also is practically unknown, certainly the influence of sleep on pathologic blood pressures It has seemed reasonable to me to assume that it would be very valuable to be able to make repeated observations at regular intervals over a long space of time with the psychic factors partly eliminated, and it has seemed especially desirable to know what the blood pressure is during sleeping hours Ordinary methods have been attempted for the serial measurement of blood pressure, but the amount of labor involved and the ever present psychic factors have interfered with successful series Especially has it been impossible to obtain reliable blood pressure determinations without waking the patient With the idea of overcoming all these difficulties at one stroke, I have devised an apparatus which automatically makes oscillometer tracings, from which the systolic and diastolic blood pressure can be measured directly with a workable degree of accuracy No satisfactory apparatus of this sort has been in use, in fact, only one has been described Fantus,[1] in 1917, devised a method by modifying the Erlanger oscillometer with the addition of a recording mercury manometer, but apparently no further use of this device has been made

The apparatus here described is contained in a cabinet, which can be rolled to the bedside, and when the cuff is applied to the arm and connection made with a rubber tube of convenient length, the cabinet may be closed and satisfactory tracings obtained hourly, for a period of from eight to fourteen hours, with no further attention from the operator and no more cooperation from the patient than that he remain perfectly quiet during the brief time that the cuff is inflated The patient may assume any position in bed between times, and unless he is unduly wakeful, he sleeps through the night without interruption He is provided with a push button which he keeps within reach to signal at the end of each hour if he is awake The tracing, when studied, gives the systolic and diastolic blood pressure as measured by a millimeter scale from the base line to characteristic points on the tracing, and if the patient is intelligent, the tracing should also show when he was awake

The apparatus is not complicated It is constructed of standard laboratory equipment with the addition of a recording mercury oscillometer constructed on a new principle In accordance with this principle, two mercury manometers (U-tubes) are used to function as one, serving two purposes, one to record pressure and one to record oscillations These manometers are as nearly matched in all dimensions as is possible The manometer which records pressure is made insensible to oscillations by an obstruction within the tube and beneath the mercury The other manometer, being quite open, is free to oscillate in response to the pulsation of the artery under the cuff These two manometers are mounted together parallel in all vertical planes A wooden float rides the mercury in each, and two very delicate steel rods mounted on these floats transmit the movements of the columns to a system of

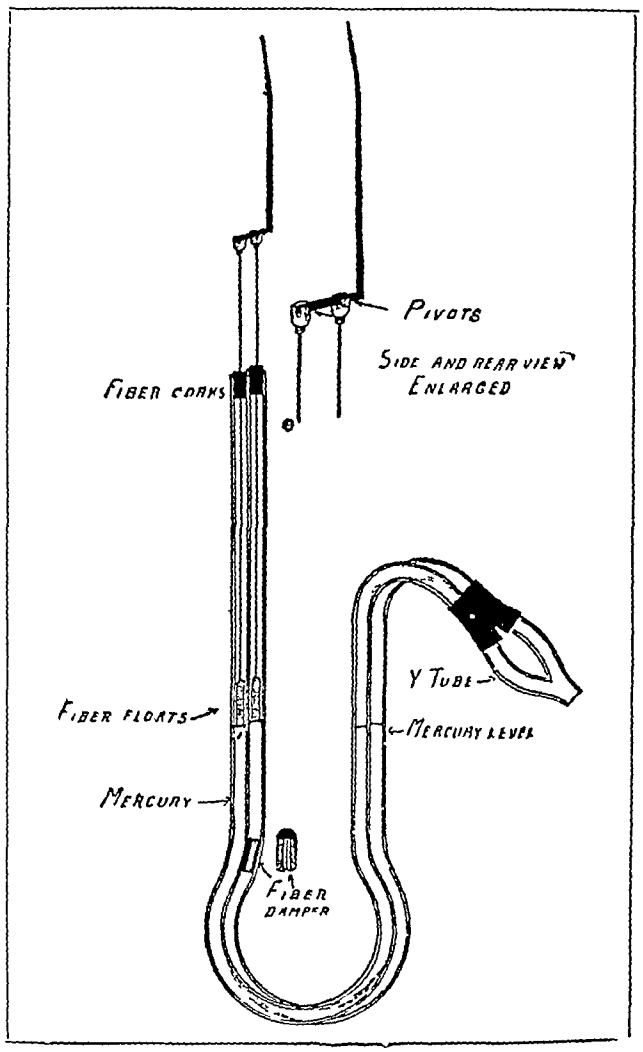

Fig 1 —Combined oscillometer and manometer

* From the Medical Department of Western Reserve University Lakeside Hospital
* Read before the Section on Practice of Medicine at the Seventy Second Annual Session of the American Medical Association Boston June, 1921

1 Fantus Bernard An Automatic Method of Prolonged Serial Blood Pressure Registration in Man, J A M A 48 1807 (June 16) 1917

levers above These levers are so constructed that the steel rod mounted on the nonoscillating manometer serves as a pivot for the lever of the oscillating one, magnifying the oscillations about eight times These features of the manometer are illustrated in Figure 1

This combined manometer and oscillometer is by no means without defect, but it is without two very common faults inherent in other mercury oscillometers In the first place, it oscillates widely enough to give

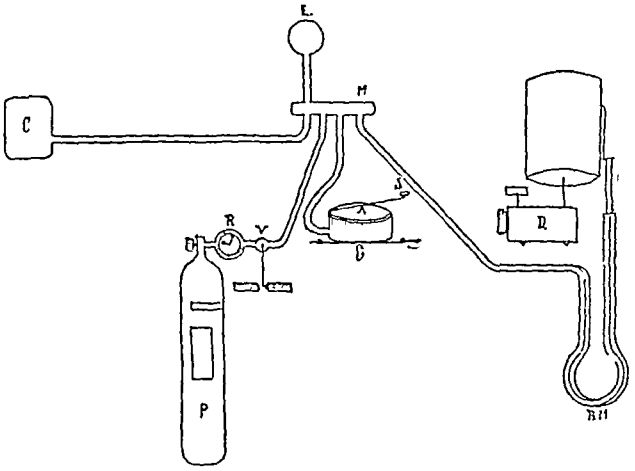

Fig 2—Arrangement of pneumatic system *P* pressure tank *R* reducing valve *V* electric valve *M* manifold *C* pneumatic cuff *E* escape valve *G* governor *S* adjustable contact to regulate pressure *R M* combined oscillometer and manometer applied to smoked drum *D* kymograph

good tracings with clear criteria Secondly, its moving parts, being very light, have little inertia and a frequency great enough to accommodate the usual pulse rate To insure satisfactory and uniform records, great care must be used in construction and great accuracy in adjusting the entire recording device In the hands of more skilful technicians I am certain that numerous improvements could be developed in applying the new principle

This manometer with its recording levers is made to write on a smoked drum by means of a long and flexible aluminum pointer The pointer of necessity moves tangentially across the circumference of the drum, but keeps its contact by means of its great flexibility To make this contact more precise, drums of exceptionally large diameter are necessary In practice, the manometer constructed on this principle records accurately at all times the pressure applied on the cuff and records fairly accurately at the same time the pulsations as they occur at various levels

The manometer is furnished with an electrically controlled valve, which produces air pressure from a storage tank at the end of each hour, as determined by an electrical time switch This time switch, being driven by a clock, can be adjusted to give records every half hour as well as every hour. The manometer is further equipped with a governor, which shuts off the air pressure when a certain level has been reached It is also provided with an adjustable escape valve, which gives a uniform rate of escape sufficiently slow to be comfortably borne by the patient The smoked drum is mounted on an ordinary kymograph, which also has an electric control, so that the drum moves in each period far enough to receive every separate tracing This entire pneumatic system—that is, electric valve, manometer, governor, escape valve and cuff, with all their connecting tubes—is mounted in a cabinet with the greatest economy of space possible

It has been found by repeated trials that the capacity of the pneumatic system must be reduced to a minimum in order to conserve the energy of oscillations which will be transmitted to the recording manometer The pneumatic system is arranged according to Figure 2, and the electric connections according to Figure 3 The details and specifications for the various parts of both the pneumatic and the electric system have been furnished by the laboratory technician, Mr Warnick

SPECIFICATIONS

Pressure tank Oxygen tank (Ohio Chemical Company) 130 gallons at 1,500 pounds pressure, reducing valve (Ohio Duplex Reducing Valve, Ohio Chemical Company) adjusted to deliver 10 pounds pressure

Electrical valve, furnished by Wallace, Tiernan & Co, New York

Time switch, furnished by Universal Time Switch Company Cleveland

Recording manometer U-Tubes, length of long arm, 16 inches, length of short arm 9 inches, inside diameter 25/64 inch, diameter of hole through obstructing plug 3/64 inch Total weight of floats, supporting rods and lever system 5 7 gm Diameter of float, 21/64 inch Length of float 23/64 inch Length of supporting rods, 10⅛ inches Diameter of supporting rods, 3/64 inch (drill rod) Cross-bar of aluminum 3/64 inch thick 7/64 inch wide and ⅛ inch long Vertical lever, aluminum 2/64 inch thick at the base, 0 007 inch thick at the point, length, 3¾ inches

Escape valve Hole through brass plate, 0 02 inch

Drum 10 inches high by 9 inches in diameter

Cabinet 34 by 20 by 18 inches, with a shelf midway

Batteries Six dry cells in series parallel

The time required to inflate the entire system to 150 mm is seven seconds

The rate of escape to average diastolic pressure is thirty-five seconds

The rate of escape to zero is one minute

These specifications are the result of repeated trials, and in order to insure satisfactory operation they must be rather rigidly adhered to

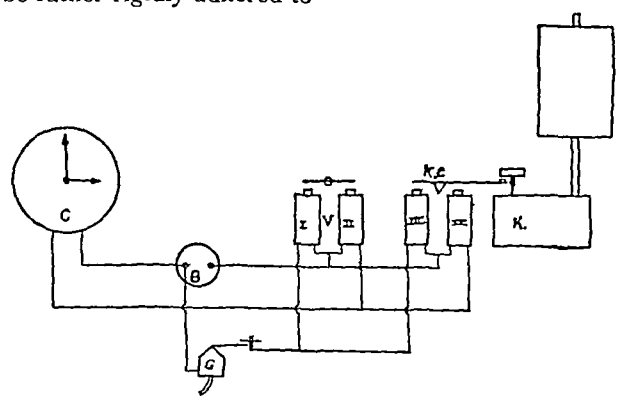

Fig 3—Arrangement of electric system *B* batteries *C* time switch *G* governor *V* electric valve *K C* kymograph control I II III IV Magnets I II III IV The time switch makes contact each hour which pulls Magnet II opening valve *V* and pulls Magnet *IV* starting the kymograph The governor in response to rising pressure makes contact which pulls Magnet I closing valve *V*, and pulls Magnet *III* stopping the kymograph

The escape valve deserves particular attention, for it has been with considerable effort that this problem has been solved Given an aperture of constant dimensions and a falling pressure, air escapes too rapidly at high pressures and too slowly at lower pressure To correct this fault, the escape valve was made as follows

An ordinary tin ointment-box was soldered shut and a tube soldered into its wall In the center of the lid a small

brass plate was soldered, through which a minute hole was drilled into the cavity of the box A needle with an adjustable screw was mounted just above the hole in such a way that the point of the needle just enters the hole When air pressure is introduced into the box, the lid bulges up, partially obstructing the hole At this stage air escapes at a high pressure from a minute opening, and as the pressure drops and the lid recedes from the needle, air escapes at a lower pressure from a larger opening By this device the escape is almost constant at all levels of pressure

The entire device is provided further with a switch which, when operated by hand, starts the mechanism and makes a record independently of the time switch This is a convenience in operating the machine at short intervals

Tracings by this manometer are variable in their general characteristics, as must be expected from the nature of many conditions which modify the rate and vigor of arterial pulsation I have thus far been unable to apply to these tracings the same criterion for selecting the systolic end point that applies to the Erlanger oscillometer I have chosen rather to put the systolic pressure at that point where there is an abrupt change in the amplitude of oscillations In most cases this has been found to correspond absolutely with the appearance of the first Korotkoff sound In many tracings the first oscillations seen have blunted or plateau-like tops, which change very soon to sharper peaks This changing to sharp peaks is apparently comparable to the spreading of the lower limbs seen in Erlanger tracings Often this peaking is coincident with an abrupt increase in amplitude The tracings often show the two phases of maximum oscillations seen in the Erlanger tracings, and very often the same abrupt change from wide oscillations to very small The diastolic pressure is read where there is an abrupt change from wide oscillations to small This has been found to correspond very closely to the fourth phase in Korotkoff sounds—that is, where there is an abrupt change from a loud to a soft sound In some tracings this abrupt change is marked also by a blunting of the peaks at the right-hand side of the tracing In some instances there is no abrupt change from wide oscillations to small, and as a consequence it is impossible to locate the diastolic pressure with any degree of certainty In many cases, when there is no such change in the character of the oscillation, there is found to be no abrupt change in the sounds If the diastolic pressure under such circumstances is to be taken, as advocated by many, where all sound disappears, I have assumed it safe to take the diastolic on my tracings where large oscillations cease, for often there are but a few millimeters between the point of abrupt change in oscillation and the disappearance of large oscillations

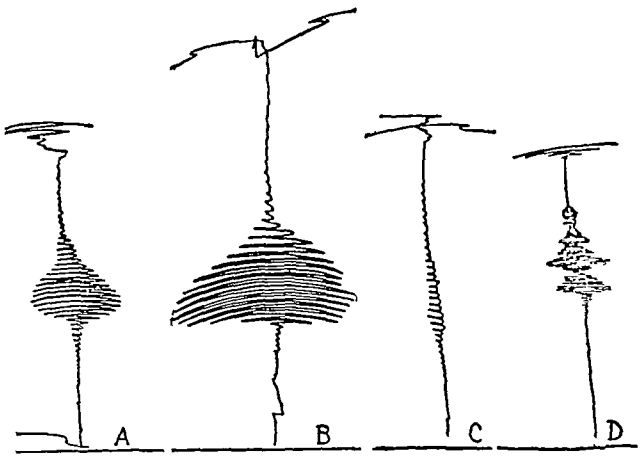

Fig 4.—These tracings for reproduction have been photographed through giving a true image but reversing the contrast Each stroke to the left is almost synchronous with the sound heard below the cuff The signal is recognized as a waviness or blurring of the tracing The signal acts by tapping lightly on the support rod of the recording lever *A* the tenth sound was signaled The eighteenth sound marked the fourth phase and the twentieth the fifth phase *B* wider oscillations than are common The signal here is obscure but is accentuated by a black dot The fourteenth sound marked both the fourth and fifth phases Note how abruptly oscillations cease although very vigorous *C* slow pulse with little excursion of vessel walls Signal again reinforced The fifteenth sound marked the fourth phase, and the twentieth sound the fifth phase *D* average pulse slow escape Signal being too vigorous disturbed the tracing but is distinct The fifty fourth sound marks the fourth phase and the sixtieth or thereabouts the fifth The tracings have been reduced one half

As auscultation is now the method chosen to determine blood pressure in man, the tracings submitted herewith have been standardized by that method and the end points established In doing this, photographic records of the Korotkoff sounds were made simultaneously with tracings on the oscillometer with an observer listening in on the artery just beneath the cuff When listening in, I have found it impossible to signal accurately either the first sound or the last sound, but all the sounds may be accurately counted and, if they occur rhythmically, a certain predetermined one may be very accurately signaled and the total number easily noted at the end of the series Therefore, I have in each experiment carefully counted the sounds as they appeared but signaled only the tenth sound, and have kept a note of the entire number of sounds heard The signal was arranged to register simultaneously on the tracing and on the photograph By this method the tenth sound was absolutely identified both with a certain oscillation on the tracing and a certain wave on the photograph Then by counting both ways from the signal near the middle, the two records could be synchronized exactly Furthermore, if a well defined fourth phase occurred, I made mental note of its appearance and, the proper serial number for it being known, this fourth phase also could be accurately located In this manner I have shown definitely that in most instances the first sound heard under the cuff is accompanied by an abrupt increase in oscillation, and that with an abrupt diminution in the loudness of sound there is an equally abrupt damping of oscillations

Before making a series of observations, it has been my practice to correlate the blood pressure as determined by auscultation with the tracings obtained by this method, assuming that if they agree at one level of blood pressure, they will not disagree very greatly at others It has not been my ambition to construct a more accurate blood pressure device and I lay no stress on variations in blood pressure which fall within the range of error of the machine I must also acknowledge that I have occasionally taken tracings which I cannot interpret By using a very slow escape, thus making oscillations record in very close file, the systolic criterion can be made very precise—so precise that in most cases respiratory variations are seen But for automatic records this slow escape cannot be used on account of discomfort in the arm of the patient

I have recorded my own blood pressure on three consecutive nights, being awakened twice during the first night, once the second night, and not at all the third night—this with no previous preparation other than the usual round of activities Record has been made on a number of normal individuals in the wards and on hos-

pital interns From the records obtained, it is quite certain that a fairly accurate idea of fluctuations in blood pressure was obtained At this time it has been tried on only a few patients with high blood pressures, of whom some have slept quite as well as normal persons, and others have been disturbed by the pressure on the arm In dealing with high blood pressure it is necessary to make the pressure on the arm almost painful in order to obliterate the pulse This is a complication which in some instances will probably be insurmountable Another difficulty is that, in studying the blood pressure on normal subjects during sleep, I have found that some of them show a substantial drop in systolic blood pressure when turning from the supine to lateral postures In some instances there is a change as great as 20 mm, which will be difficult to differentiate from a drop due to sleep Until these factors and many others have been evaluated, pressure studies in the sick must be interpreted with caution

If hourly serial blood pressure records, secured with psychic factors eliminated and as accurate as ordinary clinical methods allow, will be of any value in the diagnosis and management of pathologic blood pressure, such records will soon be forthcoming

ABSTRACT OF DISCUSSION

DR PAUL D WHITE, Boston The method described by Dr Blankenhorn seems to offer a means for future investigation not only of conditions existing during sleep but also under drug and other experimentation During the war realizing the very frequent and rapid changes in blood pressure particularly among nervous young men I used the Pachon oscillometer in addition to the ordinary sphygmomanometer I found that the oscillometric method gave from 10 to 20 mm higher readings for the systolic pressure than did the auscultatory method Dr Blankenhorn's remarks about checking up his records with the auscultatory method and finding close agreement show that the usual discrepancies of the oscillometric method are done away with apparently by the less delicate mechanism of his apparatus

The methods which have been used up to the present have largely recorded either continuous systolic pressure or systolic pressure at intervals Here is an instrument that will detect the diastolic pressure as well as the systolic I have not used this method, but I believe it will give information of value

Prescription of Alcohol in Prohibition Norway—The *Tidsskrift* for den Norske Lægeforening publishes a letter from a physician who says that until last August he had refused to write any prescriptions for liquor The consequence was that his patients were constantly arguing with him on the usefulness of alcohol He wearied of this, and from that date agreed to prescribe alcohol on demand to his old patients and members of the insurance company with which he is connected He asks three crowns for each such prescription, and turns the money over at once to the hospital or insurance treasury He says, "I do not wish to keep this money as I am a physician and I do not want to be a whisky dealer" He stamps on each prescription "Gratis" and sometimes "Injurious for Health" This arrangement has been working very nicely and all are content, and the demand is growing less The journal comments on this letter that alcohol should not be prescribed on demand" but only as the physician thinks it is required It adds that the majority of physicians of Christiansand have decided not to take any payment for prescriptions for liquor They give the prescriptions as they deem wise, but mark them all 'Gratis" This tends to discourage the better class of patients from asking for such prescriptions as they do not like to be branded as charity patients

FURTHER CLINICAL STUDIES ON THE USE OF MERCUROCHROME AS A GENERAL GERMICIDE*

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EDWIN C WHITE M D
AND
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Since the publication in 1919 of the preliminary laboratory and clinical study of "mercurochrome-220," [1] this compound has been used extensively in many urologic conditions in the Brady Urological Institute and in other genito-urinary and gynecologic services and dispensaries The satisfactory results in urologic practice have led to its application in other branches of medicine and surgery in which a deeply penetrating, nonirritating germicide of low toxicity and relatively quick action is desired As a result of our experience with this drug over a period of two years we believe that our early expectations of its great value have been realized In many cases it has proved effective when other drugs have failed, and there have been cases in which the reverse was true It is no more a panacea for all urinary infections than is any other disinfecting agent, but it is unquestionably a valuable addition to the comparatively few powerfully germicidal substances which can be applied to sensitive surfaces such as the mucosa Since our first publication, several articles have appeared

LITERATURE

In ophthalmology it has been used extensively in infections of the cornea and conjunctiva due to the gonococcus and to other organisms "A Clinical and Laboratory Report on the Use of Mercurochrome-220 in Ophthalmology" [2] was made by Lancaster, Burnett and Gaus before the Section on Ophthalmology at the New Orleans session of the American Medical Association They reported that from the cases treated the results were such as to warrant an extended use of this drug in ophthalmologic practice. The laboratory tests conducted to determine the activity of mercurochrome [3] in the presence of tears, mucus and pus gave germicidal values which corresponded very closely to the values given by our tests of this compound in the presence of urine, serum etc, due allowance being made for difference in diluent, medium and technic

In the discussion of this paper, Travis [4] reported several severe cases of chronic streptococcus infection of the middle ear in which he had secured remarkable results by the use of mercurochrome, after the failure to secure results with other drugs used over long periods of time Since that time, in a personal communication, Dr Travis has reported marked success in long-standing and refractory cases treated by the local use of this drug alone Later, its use in middle

* From the James Buchanan Brady Urological Institute the Johns Hopkins Hospital with the aid of funds granted by the United States Interdepartmental Hygiene Board for the study of the prevention and cure of venereal disease

1 Young H H White E C and Swartz E O A New Germicide Used in the Genito Urinary Tract Mercurochrome 220 J A M A 73 1483 (Nov 15) 1919

2 Lancaster W B Burnett F L and Gaus L H Mercurochrome 220 A Clinical and Laboratory Report on Its Use in Ophthalmology J A M A 75 721 724 (Sept 11) 1920

3 We shall hereafter refer to the drug simply as mercurochrome

4 Travis B F Discussion on paper by Lancaster Burnett and Gaus (Footnote 2)

ear and mastoid infections was advocated by Callison,[5] who reported satisfactory results with it

In the treatment of ophthalmia neonatorum, Clapp and Martin [6] report that mercurochrome has proved to be very efficacious, and they published reports of a number of cases in which it was used with good results

DeWitt,[7] experimenting with the action of certain organic mercurial compounds, found that mercurochrome inhibits the growth of the tubercle bacillus completely at 1 5,000, and partially at 1 10,000 These dilutions are fifty and 100 times the average dilution recommended for intravesical use Mercurochrome in 10 per cent solutions, but not in less concentrated solutions, kills the tubercle bacilli in twenty-four hours so that they will not infect guinea-pigs These laboratory findings naturally suggest the use of the drug in the tuberculous ulcerating lesions of the genital tract

SUCCESS OF MERCUROCHROME IN CURING CHRONIC DIPHTHERIA CARRIERS

Gray and Meyer [8] report

In searching for a germicide, we had to consider the enemy we were engaged against [diphtheria bacillus], knowing full well his predilection for hiding places in crypts of the tonsil, between the folds of the mucous membranes, in erosions, ulcers and also behind any shelter he can find in the nasal and pharyngeal passages The report by Young, White and Swartz on the uses of mercurochrome, lauding the marked penetrating and germicidal properties of that drug, and demonstrating that it can be utilized in relatively concentrated solutions on the mucous membranes of the bladder and urethra without causing irritation gave us the suggestion to use this germicide to reach diphtheria bacilli in the nose and throat

Of our total number of carriers we were able to treat, consecutively, thoroughly and systematically, only ninety

The 1 per cent solution of mercurochrome was used as a routine application by means of a medicine dropper, spray or swab In the more resistant cases we used the 2 per cent strength When persons complained of the application of the drug by means of the nasal swab, we used the medicine dropper and had them hold their heads back for a minute or two after the application, until the drug passed back into the nasopharynx We relied on the medicine dropper in the nasal tract almost entirely and on the swab for the tonsils In patients with nasal obstructions we utilized the nasal spray

In addition to systematizing the treatment of diphtheria carriers, we have found that the germicide of choice is a solution of mercurochrome in 0 5, 1 or 2 per cent strength By using this drug we were able to obtain in our series of ninety carriers of diphtheria bacilli eighty-eight carrier-free persons, following an average of 19 1 applications of this solution with an average of only 12 7 sick days, as compared to an average of 23 days, the best results we have found recorded for a large number of carriers [9]

USE OF MERCUROCHROME IN DENTISTRY

Darnall [10] reports

The high germicidal power of mercurochrome, coupled with its lack of irritating effect and its thorough penetration, make it particularly suited to oral pathological conditions

In gingivitis and stomatitis the treatment used was practically the same for both The membrane is dried and protected by use of cotton, and the area touched with a 3 per cent solution of mercurochrome In infected sockets the socket is washed out with a strong antiseptic spray, all necrotic tissue removed, and the solution carried down into the socket with a small pledget of cotton

In pyorrhea, after prophylaxis, the teeth are isolated with cotton rolls buccally and lingually, and the surface dried as much as possible The solution is carried down into the pocket with a small wisp of cotton wrapped on a broach Care should be taken to protect the crown of the tooth from staining

In root resection, after curettement, the cavity is touched with a 3 per cent solution of mercurochrome In putrescent root canals it is our belief that this germicide will prove to be as efficient as any used in this branch

This drug is especially suited to the treatment of gingivitis and stomatitis A 3 per cent solution was used with impunity in all open lesions, no irritation resulting The best results are obtained by drying off the part affected and applying the solution not oftener than every other day

OUR CLINICAL EXPERIENCES WITH MERCUROCHROME

URETHRITIS *		
Cases of acute urethritis treated with mercurochrome	187	
Cases tabulated	100	
Cases not tabulated because details were lacking but in which satisfactory results were obtained	87	
Of the 100 tabulated cases		
Percentage developing complications after starting treatment	7	
Percentage with anterior urethral involvement alone	61	
Percentage with anterior and posterior urethral involvement	39	
Number followed until apparently cured	32	
Number discontinuing treatment	68	
Shortest time required to render the urethral discharge free from organisms	4	days
Longest time required (*a*) by injection	36	days
Longest time required (*b*) by irrigations	84	days
Average time required	16 8	days
CYSTITIS		
Number of cases tabulated	40	
Cases cured	30	(75%)
Cases improved	7	(17 5%)
Cases not improved	3	(7 5%)
Smallest number of treatments needed to render urine free from organisms	1	
Smallest number of days under treatment	1	
Largest number of treatments needed to render urine free from organisms	23	
Largest number of days under treatment	60	
Average number of days under treatment	18 5	
Average number of treatments	7 6	
PYELITIS		
Number of cases tabulated	17	
Patients cured (sterilized)	10	(58%)
Patients improved	4	(23 2%)
Patients not improved	3	(17 4%)
Average number of pelvic lavages given in cases cured	9 2	
Smallest number of treatments needed to sterilize	3	
Largest number of treatments needed to sterilize	12	

* These patients are all public dispensary cases and many of them negroes

REPORTS BY LETTER OR IN PERSON

In order that we might not be carried away by "the lively expectation of important results which is the cause of such exaggerated estimates of the therapeutic values of new remedies," we sent a questionnaire to a number of physicians and surgeons to whom we had previously sent a supply of mercurochrome for clinical trial, asking for their opinion of its therapeutic value in the conditions in which they had used it

Replies were received from twenty physicians who had used this product in their clinical work Their reports are abstracted and included in this paper for the clinical data submitted to us Wherever details were given in the case histories, the cases were incorporated in our tables The accompanying table gives

5 Callison J G The Treatment of Chronic Purulent Otitis Media New York M J **111** 1072 (June 19) 1920

6 Clapp C A and Martin M A Use of Mercurochrome 220 as a Germicide in Ophthalmia Neonatorum A Preliminary Report J A M A **74** 1224 (May 1) 1920

7 DeWitt Lydia M Action of Mercurochrome 220 and of Mercurophen A Preliminary Report of Effects on the Human Tubercle Bacillus and on Experimental Tuberculosis in Guinea Pigs J A M A **75** 1422 (Nov 20) 1920

8 Gray, G A and Meyer B I Diphtheria Carriers and Their Treatment with Mercurochrome 220 J Infect Dis **28**, No 4 (April) 1921

9 See also the report from Stewart

10 Darnall, W L Preliminary Report on Mercurochrome 220, as a Germicide in Dentistry, U S Naval Bull **15** 194 (Jan) 1921

results of the questionnaires and the replies received Reports were received from various Army camps and hospitals through the courtesy of the Surgeon-General

It is scarcely necessary to call attention to the great difficulty of securing reliable, accurate data of clinical results in the treatment of urethritis, both specific and nonspecific, in our general dispensaries A large majority of the patients do not cooperate with the physician, and a still greater percentage discontinue treatment just as soon as annoying symptoms, such as pain and discharge, have disappeared

Drs Scott and O'Malley, working in the U S Public Health Venereal Clinic at Mercy Hospital, Baltimore, found the stain caused by mercurochrome to be a very serious objection to its use in acute gonorrhea in public dispensaries The stains are easily removed from the hand and skin by the use of acid alcohol, vinegar, permanganate and oxalic acid solution, sweet spirit of niter, surgical solution of chlorinated soda (Dakin's solution) or Harrington's solutions, but stains on the clothing are more persistent and may present telltale evidence of a condition which the patient does not care to have known As we anticipated early in our work with mercurochrome, we have found the stain to be a serious objection to its use by the patient

SUMMARY OF CLINICAL USES

Acute Urethritis.—The work of Swartz and Davis [11] established the fact that solutions of mercurochrome in a strength of 1 16,000 will kill the gonococcus in twenty minutes in vitro Mercurochrome, 1 800, in urine will kill *B coli* in one minute, while 1 to 100 acriflavine requires one hour to kill *B coli* in urine In 50 per cent dog serum mercurochrome, 0 5 per cent, kills *B coli* in one minute, while 0 5 per cent fails to kill *B coli* in one hour Solutions of mercurochrome, 1 per cent, are, as a rule, well tolerated by the urethra, and we have used as high as 5 per cent solutions in the urethra in some instances Occasionally, a 1 per cent solution may prove to be irritating, and a weaker solution must be employed This is in accord with clinical experience in the use of any antiseptic in the urethra In our work, complaint of burning, other than a temporary smarting, has been very infrequent It is our opinion that solutions of from 0 25 to 0 5 are sufficiently concentrated to produce a satisfactory germicidal effect in the urethra and are always nonirritating Emphasis should be laid on the desirability of using fresh solutions, as Swartz and Davis have shown that the solutions deteriorate on standing [12] In spite of the high test tube germicidal activity of these solutions, the results obtained by local use of these solutions in acute gonorrhea have not been vastly superior to those obtained by the intelligent use of argyrol or acriflavine The introduction of the water-soluble sodium salt and the abandonment of the use of the alkali-soluble form of the drug is responsible for a diminution in the amount of irritation produced by these solutions

Excess of free alkali proved irritating to the mucosa of the urinary tract Cases reported in our first paper [1] were treated with solutions made from the alkali-soluble dye Cases reported in this paper were all treated with the later water-soluble compound

The stain led a number of patients to discontinue treatment, and has been a factor in preventing the accumulation of accurate clinical data In acute gonorrhea (100 cases) we were able to render the urethral discharge microscopically free from organisms in an average of 16 8 days, and in a great many cases no gonococci were found after the first week The length of time necessary to render the discharge organism-free depends, within certain limits, on the frequency of treatments and on the length of time the drug is retained in the urethra In some of the cases, the treatments were often four days apart, while in others they were given several times a day, by which technic the best results are obtained Mercurochrome should be continued several days after the gonococcus has disappeared Then gradually discontinuing the use of the drug in these cases and substituting copious hot irrigations of weak permanganate, silver nitrate or acriflavine, the discharge ceases and early cures are effected Mercurochrome has shown up as an excellent agent for injection in gonorrhea, but the deep penetration of the gonococcus into urethral glands and prostate make quick sterilization difficult for any drug In cases seen in the first twenty-four hours, very quick cures have been obtained We have not seen any stricture formation that we felt was due to the drug such as has been described after the use of other antiseptics We have not seen the severe reactions reported to us by Kleiner [13]

Chronic Urethritis.—In the treatment of the chronic infections, the value of mercurochrome is that of a quick-acting, penetrating, nontoxic and nonirritating germicide of great power The most satisfactory results obtained by the use of the drug in the urethra were in chronic urethritis Used as an instillation and combined with needed instrumentation, the results have been very satisfactory This with but few exceptions is the consensus of opinion of the men who replied to our questionnaire Very satisfactory results were also reported in nonspecific urethritis

In chronic posterior urethritis, associated with chronic prostatitis and vesiculitis, its beneficial action has been clearly demonstrated We have recovered the dye from the prostatic secretion, obtained by massage, more than a week after its injection into the urethra The purulent secretion expressed by massage two or three days after injection is often stained a deep pink Our procedure in these cases was as follows The urethra was irrigated and the bladder was filled with sterile water, physiologic sodium chlorid solution or weak permanganate solution The prostate and vesicles were massaged and stripped The bladder was then emptied by voiding, and the mercurochrome solution placed in the posterior urethra by means of a Keyes posterior instillator, or forced back into the prostatic urethra by a small hand syringe (rubber bulb type)

Roberts [14] reports having obtained the dye from the seminal vesicles two weeks after its injection into the vas (vasotomy) in cases of chronic seminal vesiculitis

11 Swartz E O and Davis D M Action of Mercurochrome 220 on the Gonococcus J A. M A **76** 844 (March 26) 1921

12 This drug which is a disodium salt of dibromo hydroxymercury fluorescein was originally prepared in our laboratories in the Brady Urological Institute as the free acid soluble in the theoretical amount of alkali Although the preparation of the solution in this way was quite satisfactory under chemical control it was *not suitable for use by the* average physician and we had reports of irritation due doubtless to the presence of excess alkali Later Messrs Hynson Westcott & Dunning Baltimore prepared a satisfactory water soluble sodium salt Germicidal tests on solution of this salt have shown that it is equal in germicidal value to the earlier alkali soluble form The preparation and chemistry of the drug have been presented elsewhere (E C White Mercury Derivatives of Phthaleins J Am. Chem Soc **42** 2355 1920)

13 Kleiner Israel New Haven Conn., personal letter to the authors Sept 25 1920

14 Roberts G M A Plea for a More Modern Treatment of Acute Gonorrhea Tennessee State M J **13** 184 (Sept) 1920

Cumming [15] also reports very satisfactory results with this treatment

In nonspecific urthritis, Grantham [16] reports prompt sterilization of the canal by the use of a 2 per cent solution retained for ten minutes, three times a day

Cystitis.—The results obtained in many cases of old long-standing cystitis have been remarkable, especially those due to *B coli* Observers continually report the clearing up of old cases as a result of a few instillations of 1 per cent solutions The drug does not yield such striking results when used in the coccus infections of the bladder or kidney pelvis This clinical finding is in agreement with laboratory results recently obtained by J H Hill, bacteriologist to the Brady Institute In a 50 per cent serum medium, mercurochrome has been shown to be more effective against *B coli* than against *Staphylococcus aureus* The former is killed in one minute by a 1 200 dilution of the drug, but not by a dilution of 1 300 To kill *Staphylococcus aureus* under the same conditions, a dilution of 1 50 is required, showing a ratio of 4 1 in favor of *B coli* In exposures of one hour in the same medium, *B coli* is killed by a dilution of 1 600, *Staphylococcus aureus*, by 1 200

We have seen no bad results from its use, but occasionally patients complain of burning, these are the exceptions to the rule We do not know why a 0 5 per cent solution should prove to be irritating in an occasional case and not at all irritating in almost all other cases We feel that the preliminary irrigation of the bladder with sterile water or physiologic sodium chlorid solution to cleanse the bladder is essential The solutions of mercurochrome should then be injected into the bladder and retained as long as possible This may be repeated as often as three times a day, depending on the tolerance of the patient As the object is to sterilize the bladder quickly, at least two treatments daily should be given if possible It is best to begin with a weak solution, 0 5 per cent, and increase the strength of the solution to 1 per cent in a day or two, though in many cases two injections of 1 per cent solution daily are well borne Solutions should be made fresh and kept in colored bottles, as there is some deterioration in solutions kept a long time, with consequent loss of germicidal power The use of old solutions, and in frequent treatments, accounts for many failures to sterilize

There has been a marked relief seen in some cases of tuberculous cystitis treated by daily instillations of mercurochrome In some cases the rapidity with which a foul, purulent cystitis of long standing becomes sterile and the urine clear and free from pus is remarkable

Pyelitis.—A large number of cases of pyelitis were treated with mercurochrome The incomplete records prevent accurate statistical studies as to the relative efficiency of this drug and of silver nitrate, which is in common use As a result of our experience, we feel that mercurochrome has about as great a germicidal action in the renal pelvis as 1 per cent silver nitrate solution, and has the advantage of not producing the painful reaction usually noted after the use of the silver solution A reaction following pelvic lavage with mercurochrome is rare in our experience In resistant cases, the use of mercurochrome alternately with silver nitrate solution seems to be efficacious when results cannot be obtained by the use of either drug alone As many cases of "pyelitis" are due to foci of infection elsewhere (teeth, tonsils, etc), cures are often impossible from pelvic lavage alone

An objection to the use of mercurochrome in the kidney is the persistence of the stain, which may interfere with the colorimetric reading of the phenolsulphonephthalein output The technic used in pelvic lavage is that described in our former publication [1]

Venereal Ulcerations.—Venereal ulcerations (chancroids, buboes, etc), almost without an exception, when dressed with mercurochrome (either the solution or the paste) promptly become cleaner and the granulations healthy looking Bowman [17] reports less contraction after healing of ulcers which have been treated with this drug Buboes dressed with mercurochrome gauze heal very rapidly, and the period of disability is materially shortened The results obtained are excellent, the only objection being the stain

Other Uses of Mercurochrome.—Randall [18] uses this drug to keep operative wounds of the genitalia sterile, and Healy [19] used it on vulvar ulcerations with good results Baca [20] reports unusually good results obtained in carbuncles which had resisted the use of Dakin's solution for prolonged periods When the cavities were packed lightly with gauze saturated with mercurochrome, there was an immediate cleaning of the wound and a rapid healing

Used instead of tincture of iodin to prevent infections in shop injuries, mercurochrome is proving very satisfactory in industrial surgery [21] It does not irritate the epidermis, and inflammatory reaction disappears

Chronic Discharging Sinuses.—We have found mercurochrome particularly valuable in discharging sinuses, especially those following removal of tuberculous kidneys or epididymides We also have reports from sanatoriums for tuberculosis attesting its value in various forms of discharging sinuses and fistulas A 1 per cent mercurochrome solution may be injected gently into a fistula with impunity, daily Its low toxicity and the escape of the excess fluid make it much safer than bismuth paste in the treatment of deep sinuses

ABSTRACTS OF CLINICAL RESULTS OBTAINED BY OTHER OBSERVERS

Keaney [22] declares that the use of mercurochrome was most satisfactory in the U S Naval Hospital at Brooklyn Smears became free from gonococci in from seven to ten days Also mercurochrome was very successful in chancroids

Klingensmith [23] reports twenty-seven cases of chronic gonorrhea which had remained uncured after long treatments with acriflavine and protargol Twenty were cured in an average of twenty-five days with 1 per cent mercurochrome

Bowman [17] reports twenty cases of acute gonorrhea One per cent mercurochrome injections were given twice daily, all patients were rendered sterile in from eight to fifteen days Five patients with chronic cystitis were cured in from five to ten days with irrigations of mercurochrome, 1 500, and instillations of mercurochrome 5 per cent Chancroids healed rapidly with mercurochrome paste, 1 or 2 per cent

15 Cumming Lieut R E chief Section of Urology Walter Reed U S Army Hospital

16 Grantham W F, Asheville, N C, personal communication to the authors 1920

17 Bowman Major P N Genito Urinary Department Camp Hospital Camp Meade Md Sept 10 1920

18 Randall Alexander Philadelphia personal letter to the authors 1920

19 Healy, W P New York personal letter to the authors 1920

20 Baca J F Walsenburg Colo, personal letter to Hynson Westcott & Dunning

21 DeHart S Varying Systems in Plant Hospitals Hospital Management August 1920

22 Keaney F P U S Naval Hospital Brooklyn personal communication to the authors 1920

23 Klingensmith Major W R chief Urological Service U S Army General Hospital No 41 Fox Hills Staten Island N Y, 1920

Anderson[24] reports thirteen cases of acute gonorrhea, "all cured promptly" Of eight chronic cases, three were cured and the others improved

Skeer[25] reports fifty cases of acute gonorrhea, thirty-six anterior, fourteen posterior, all rendered gonococcus free in from five to twenty-four days (four injections with 1 per cent mercurochrome daily)

Young[26] reports unsatisfactory results in acute gonorrhea, but very satisfactory results in subacute and chronic gonorrhea

Burns[27] reports six cases of chronic colon bacillus cystitis treated with 1 per cent mercurochrome, three were cured, three improved

Robinson[28] reports ten cases of acute anterior urethritis cured in from four to ten days, seven chronic anterior cases, five cured within a month (after resisting other treatment over a long period of time), seven chronic vesiculitis and prostatitis, all greatly improved

Estes[29] writes "In bladder infections, results with mercurochrome are very striking The urine becomes bacteria free in from ten to fourteen days"

Crowell[30] reports brilliant results with mercurochrome in *B coli* infections of the bladder and kidney, also in chronic urethritis, less effective in acute urethritis

Kleiner[13] obtained excellent results with mercurochrome in vesical tuberculosis and chronic cystitis Results were not so good in urethritis

Neel[31] reports excellent results in acute vaginitis and endocervicitis One case was sterilized by six treatments

Healy[19] reports three cases of severe pyelitis of pregnancy cured by pelvic lavage with 0 5 per cent mercurochrome

Wilder[3] reports three cases of chronic *B coli* cystitis sterilized by four treatments, and one not yet cured by three instillations of 1 per cent mercurochrome

Wynne[32] reports two cases of *B coli* cystitis cured by seven and thirteen instillations of 0 5 per cent mercurochrome Six cases of acute urethritis in the female were treated by mercurochrome, five were cured and one was unimproved

Randall,[18] at the Philadelphia Hospital reported "Mercurochrome is doing something that nothing else did before in clearing up chronic infections — sometimes miraculous" "Have aborted five cases of acute urethritis in which treatment was begun in first thirty-six hours" Mercurochrome valuable in operations on the genitalia, urethra and prostate, and to prevent urethral chills following instrumentation

Snyder[34] wrote "As a result of my experience, I consider it the most valuable urinary antiseptic available"

Hinman[35] reported fourteen cases of *B coli* cystitis cured by mercurochrome and considers it "one of the most valuable additions to urinary antisepsis, especially in chronic cystitis

Results have been most remarkable, sometimes clearing up in three instillations"

Tankersley[36] wrote "I have used 1 per cent mercurochrome in bladder and kidney several hundred times and find it the most satisfactory antiseptic I also use mercurochrome in wounds and compound fractures in clean and infected wounds, appendical cavities etc with good results It is a splendid nonirritating antiseptic"

Roberts[14] said "I have used 0 25 per cent mercurochrome as an injection in seminal vesiculitis after vasotomy, 10 c c being injected often in each side very successfully"

Clapp[37] reported 'In gonorrheal ophthalmia, if used early and at intervals of two hours, 2 per cent mercurochrome causes disappearance of organisms and pus more rapidly than any other antiseptic we have used" Also valuable in corneal ulcers

Crowe[38] reported "We have used mercurochrome in the otolaryngological department of the Johns Hopkins Hospital during the past year with most gratifying results In 5 and 10 per cent solutions it is nonirritating and nontoxic, and on account of penetrating properties is especially suitable as a bactericidal agent, and most efficacious Acute coryza may be aborted if treated within the first twelve hours Have used mercurochrome in chronic antrum infections in 5 per cent solution and in acute in 1 per cent solutions, in about 150 cases In postoperative treatment of mastoid and ethmoid cavities mercurochrome is preferable to Dakin's solution, as it does not kill young granulation tissue In chronic suppurative otitis media, 5 per cent mercurochrome causes rapid cessation of discharge"

Bidgood[39] reported "In the Hunterian Laboratory mercurochrome is most useful in treating open wounds in animals"

Cumming[15] reported "In the Department of Urology, Walter Reed U S Army General Hospital, mercurochrome is used almost exclusively in the treatment of gonorrhea with highly satisfactory results In fifteen cases have injected mercurochrome into vesicles through vas with good results"

SPECIAL CASES

In the complete report, a series of seventeen specially interesting cases are given in full Briefly, they were as follows

CASE 1—Man, aged 58, prostatitis, cystitis, pyelitis of twelve years' duration, *B coli*, two pelvic lavages with 1 per cent mercurochrome sterilized kidneys, twelve treatments of bladder and prostate were required to render urine and prostatic secretion bacteria free

CASE 2—Man aged 49, chronic *B coli* pyelitis, bilateral cystitis Four lavages with 1 per cent mercurochrome cured pyelitis Prostatic massage and eight 1 per cent mercurochrome instillations cured cystitis Examined one month later, well

CASE 3—Man, aged 51, double pyelitis, *B coli* Sterilized by thirteen lavages with 1 per cent mercurochrome Examined two months later, urine clear and sterile

CASE 4—Man aged 31, chronic cystitis (median bar), *B coli* Sterilized by ten instillations with 1 per cent mercurochrome Punch operation, reinfection of bladder Sterilized by four instillations with 1 per cent mercurochrome (Dr Frontz)

CASE 5—Man, aged 34, chronic cystitis, prostatitis, *B coli* Sterilized by six instillations with 1 per cent mercurochrome Examined six months later, urine uninfected

CASE 6—Woman, chronic cystitis, *B coli* Sterilized by 1 per cent mercurochrome in five days Followed two months, urine clear, no infection

CASE 7—Man, aged 22, chronic urethritis, bacilli and cocci in urethral discharge Treatment twice daily with injections of 1 per cent mercurochrome After three days, urethra sterile, slight discharge still present

CASE 8—Man, aged 44, chronic prostatitis, *B coli* and cocci in prostatic secretion and urine, treated two or three times daily with irrigations and instillations of 1 per cent. mercurochrome and occasional prostatic massage Urine and prostatic secretion sterile after eight days

CASE 9—Man, aged 51, chronic cystitis, prostatitis *B coli* and cocci Treated with irrigations, instillations of 1 per

24 Anderson Lieut J K O Reilly General Hospital Oteen N C, 1920
25 Skeer Jacob Brooklyn U S Navy case reports sent to Brady Institute 1920
26 Young C F Fort Scott Kan personal letter to the authors 1920 reply to questionnaire
27 Burns J E Kan as City Mo personal letter to the authors 1920
28 Robinson, M A Reno Nev personal letter to the authors and report 1920
29 Estes W L Jr Bethlehem Pa personal report to the authors 1920
30 Crowell, A J Charlotte N C, personal letter to the authors 1920
31 Neel J Craig San Francisco personal report to the authors 1920
32 Wilder W O Springfield Mass, personal letter to the authors, 1920 reply to questionnaire
33 Wynne H M N, Minneapolis personal letter to the authors 1920
34 Snyder K F Freeport Ill personal letter to the authors reply to questionnaire
35 Hinman, Frank San Francisco personal letter to the authors, 1920
36 Tankersley, J W, visiting surgeon St Louis Hospital Greensboro, N C
37 Clapp C A Report from Department of Ophthalmology, Johns Hopkins Hospital
38 Crowe S J Report from the Department of Laryngology Johns Hopkins Hospital
39 Bidgood C Y Report from the Hunterian Laboratory, Johns Hopkins University

cent mercurochrome and prostatic massage, sterile after eight treatments Followed six weeks, urine clear and sterile

CASE 10—Man, aged 39, chronic cystitis, coccus infection Sterile and free from pus after three instillations with 1 per cent. mercurochrome Followed five weeks, no return of infection

CASE 11—Man, aged 49, chronic cystitis, *B coli*, chronic prostatitis After six treatments, given twice daily, and prostatic massage, urine and prostatic secretion became sterile Followed six weeks

CASE 12—Man, aged 69, stricture of urethra, vesical calculus, instrumentation, infection of bladder, coccus Sterilized by ten instillations with 1 per cent mercurochrome (and a tin preparation by mouth) Followed five days

CASE 13—Man, aged 58, prostatitis, vesiculitis, urine sterile, prostatic secretion, cocci and bacilli, after five treatments—massage and instillation with 1 per cent mercurochrome—secretion found free from infection Massage treatment continued two weeks, still sterile

CASE 14—Man, aged 70, stricture of urethra with infected urine, *B coli* Treated by dilatations of stricture, irrigations, instillations with 1 per cent mercurochrome once daily Urine sterile after ten days Followed three weeks, sterile

CASE 15—Man, aged 42, chronic cystitis, *B coli* treated twice daily with irrigations, sterile water and instillations of 1 per cent mercurochrome Urine sterile after ten treatments Followed three months, urine clear and sterile

CONCLUSIONS

1 Mercurochrome has proved to be a very valuable drug in acute gonorrhea, but the intense stain is a drawback to its use as an injection by the patient Acriflavine is free from this objection and, although not so good a germicide, is often preferable in acute cases

2 In chronic infections of the urethra, prostate and vesicles the great value of mercurochrome has been amply proved It penetrates deeply and may be found in the prostatic secretion several days after posterior instillation

3 The results obtained in many cases of chronic cystitis are remarkable long standing infections often clearing up in a few treatments In some cases which fail to become sterile constant reinfection of the bladder is found to occur from kidneys or prostate

4 Mercurochrome is less irritating and produces less reaction in the renal pelvis than silver nitrate solutions, while possessing about equal germicidal powers, but in some cases both drugs should be used alternately, and sometimes silver is better

5 In some cases of pyelitis, the infection comes from the teeth, tonsils, etc, and sterilization of the pelvis is impossible until the primary focus is cured

6 Continued use has proved it to be a most satisfactory dressing for venereal ulcerations and buboes

7 In general surgery, reports indicate that mercurochrome is very valuable in dressing open wounds and sinuses

8 The germicidal efficiency of the drug in other branches of medicine and surgery has been proved, especially in the treatment of infections of the throat, nose, sinuses, ear and eye and teeth It is reported to be most efficient in disinfecting the throats of diphtheria carriers

Medical Ethics and Medical Progress—Wherever there are good hospitals and good nursing there always good surgery is to be found On the other hand, it is quite impossible even to imagine the development of anything like satisfactory surgery where the hospitals are poor and, above all, unclean, and where there is no nursing such as would be helpful in the after care of surgical patients—J J Walsh, *Hospital Progress* **3** 53, 1921

MEDICAL JURISPRUDENCE

THE GENERAL RULES OF LAW GOVERNING THE COMPENSATION OF PHYSICIANS AND SURGEONS *

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It is a safe assumption that the average medical man has given but scant thought to the matter of his compensation for services rendered or to be rendered, other than the subconscious knowledge that he earns his livelihood by his professional skill, that in the past he has rendered bills for his services, that they have been paid with or without dispute or discussion, and that the same course of procedure and practice will probably continue in the future

The law governing physicians and surgeons' compensation follows so closely the dictates of natural justice that more than an occasional conflict between the practitioner's ideas of what is right and just and the legal doctrines on the same subject is not to be expected Such conflicts, however, are by no means unknown, and when precipitated create a situation with which the daily practitioner may at any time find himself face to face When such occasion arises, the physician will doubtless express his amazement at the large body of law which has been created by judicial utterance and the determination of juries on this subject

Astounding as it may seem, the old common law doctrine denied to the physician the right to sue for his fees Within comparatively recent times this doctrine has been overthrown and the medical man today is in the same position as any other professional to sue and recover for services rendered For some time it was held that the practitioner virtually warranted his skill, and that if he mistook the nature of the disease, such error of judgment or lack of skill would constitute a complete bar to any recovery for compensation The rule today, however, requires of the physician only the exercise of a reasonable degree of care and skill, and there is no warranty that he will effect a cure If he possesses and uses reasonable skill judgment and diligence, such as is ordinarily possessed and employed by members of his profession, he is entitled to recover his compensation It has been held in an Iowa decision that when a physician is guilty of negligence in the treatmen of his patient which results in damage to the latter, he is not necessarily precluded entirely from recovering compensation, but that the amount of his recovery, if anything, depends on the amount of damage suffered because of his negligence On the other hand, it has been determined in New York that a physician may not recover for visits to a patient in the course of which he treated a broken limb when he had been guilty of malpractice, as the court held that the implied contract for services was not severable but was an entire one That the surgeon is not required to possess or exercise the highest degree of skill, provided the operation is beneficial to the patient although it might have been performed more successfully by others, has been decreed by the Tennessee courts

In some parts of the United States the so-called "No cure, no pay" agreement is in effect particularly in those communities in which the residents are financially impecunious When such an agreement exists between

* The large majority of the statements made in this article are not the writer's opinions but are based on decisions of the higher courts.

the physician and the patient, the courts have uniformly required the physician to adhere to his bargain In other words, if he undertakes to treat a patient on the understanding that he is not to be compensated unless there is a cure, he will be held to his agreement and will not be entitled to compensation in the absence of proof that a cure has been effected Whether or not a substantial benefit to the patient or improvement in his condition would warrant a recovery for compensation even in the face of a "No cure, no pay" agreement, in an action based on an alleged quasicontractual relationship, is doubtful, although in my opinion there is substantial justice in support of such a contention, notwithstanding the fact that it appears to conflict openly with the terms of an express agreement There is no good reason why such a claim should not be held to be analogous to the established law covering sales of merchandise for in such cases although merchandise contracted for does not meet the specifications of the contract, the vendor is permitted to recover the actual value of the merchandise if the merchandise is retained by the vendee Since services rendered by a physician cannot be returned by the patient or recalled by the medical man, as would be possible with merchandise, it would seem as though the dictates of justice should require payment for such services as have been rendered, provided they have proved of benefit to the patient even in the face of a "No cure, no pay" agreement

It is, of course customary for the physician to render his services only on the request either of the prospective patient or of some intimate member of his or her family When the patient himself solicits the services he incurs the liability for compensation When the services are solicited by a parent for a child, the obligation is that of the parent to pay for the services rendered, as the law requires the parent not only to properly feed, clothe, educate and generally protect the child, but also to furnish it with necessary medical attention

When the services are directly rendered to an adult at the request of another adult, the charge is properly made against the individual to whom the services are rendered, but there is an obligation cognizable at law whereby the individual soliciting the services may be held to have obligated himself to pay therefor Whether the physician elects his remedy by rendering his bill to the individual to whom the services were rendered and thereby waives any claim against the individual who solicited his services is a subject on which the courts are not in accord It would seem, however, that if a relationship of consanguinity exists, the individual soliciting the services assumes the obligation to pay therefor In the absence of a definite understanding the practitioner should assure himself, when services are requested to be rendered to an adult through the agency of another adult, as to the individual who assumes the obligation to pay for the services He may otherwise find himself in an embarrassing situation and in considerable difficulty if he should find it necessary to litigate his claim

There is one class of cases, however, in which no obligation is imposed upon the individual soliciting the services, and that is when emergency services have been rendered to an unconscious person by a physician or surgeon at the request of a third party who bears no relationship to the patient The rationale for this rule makes itself readily apparent and was well expressed by the Missouri Appellate Court in the case of *Meisenbach v Southern Cooperage Company*

> When a person is dangerously wounded and perhaps unable to speak for himself, or suffering so much that he does not know how to do it, any person will run to the nearest surgeon in the performance of an ordinary office of humanity If it were the law that the person so going for the surgeon thereby undertakes to become personally responsible for the surgeon's bill and especially for the surgeon's bill through the long subsequent course of treatment, many would hesitate to perform this office and in the meantime the sufferer might die for the want of the necessary immediate attention Nor is there a common and fair understanding that the person making the request or ordering it to be made in behalf of the sufferer under the circumstances assumes responsibility for the surgeon's bill

The patient treated under such circumstances is of course, liable for the reasonable value of the services rendered, and, in the event of his death, his estate is properly chargeable with such compensation If the patient should be devoid of worldly goods, the daily practitioner, called on to perform so many acts of charity, will not quarrel with this rule

It is probably needless to state that a person cannot recover for services rendered as a physician or surgeon unless he is possessed of a certificate or license to practice, as required by statute This salutary rule causes some difficulty when a physician from one state or county renders services in another state or county It would appear to me as though the "full faith and credit" clause of the federal constitution should be held to require the courts and statutes of one state to accord to the physician the right to sue in its courts for services rendered within its borders, if he is a member of the profession in good standing in a sister state This is gradually becoming the rule, although there have been decisions denying the right to sue for compensation under such circumstances

VALUE OF SERVICES

Now that the fundamentals on which the physician's right to recover compensation rest have been discussed, the next question that presents itself is the amount of compensation to which he is entitled and the basis on which such amount is to be computed

An attempt was made in some very early cases to establish the amount of compensation on the basis of what the physician had charged for similar services This measure was repudiated in an early Alabama decision, and while it has never been adopted as an absolute test of value, the inhibition against it has been relaxed to the extent of permitting such proof as collateral to actual proof of value The established method of proof of value of a physician or surgeon's services is the customary charge of physicians or surgeons for like services in the same locality or neighborhood It is generally accepted that a physician need not prove the value of his services to the defendant, but that the ordinary and reasonable value of like services will be deemed sufficient

It is, of course, unnecessary for the practitioner to prove the existence of an express contract for compensation, as the law implies a promise by the patient to pay a reasonable sum for the services rendered arising out of the mere act of employment itself The proof of the reasonableness of the charge is not, however, sufficient when the patient is able to show that prior services were rendered by the physician for a lesser charge In other words, a physician may be able to

prove that a certain charge per visit is in all respects reasonable, but if he has been treating the patient in the not distant past for a lesser sum, the patient may show the compensation which he has been paying the practitioner, who will then be limited to such charges in the absence of any agreement increasing the rate of compensation While this holding may at first blush appear to be harsh, mature consideration will convince the reader that in the absence of a new agreement covering compensation, it would be unjust to permit the physician to increase his charges without notice to the patient when the patient has doubtless been relying on the previous scale of charges

While it is a well established and recognized practice, particularly with surgeons, to be guided in their charges by the financial ability of the patient to pay, proof of such financial condition is inadmissible and the surgeon will be relegated to the reasonableness of his charge, irrespective of the patient's financial status This doctrine has not, however, been universally adopted, and there are some decisions that permit proof of the patient's financial ability to pay In considering the amount payable to the surgeon for the performance of an operation, his measure of recovery is not limited to a sum commensurate with the labor performed and his skill or responsibility, but the jury may take into consideration the exhausting study, the time consumed and the expense incurred in aquiring professional knowledge and skill

In Michigan it has been held that the value of a physician's services is not to be determined by the actual average daily receipts to the extent of excluding competent opinions as to what the services were worth, and in New York it is competent for a physician to show the nature of a patient's disease and its mode of treatment, in order to prove the value of his services On the other hand, the practitioner is bound by the value of his services as evidenced by his "receipt in full" for such services, and he cannot recover more though the estimate was too low when based on an estimate of reasonableness, in the absence of proof altering the effect of the receipt It is, of course, competent to show the character and skill of a physician or surgeon in order to prove the value of his services, and he may also show that his professional standing is high as bearing on the value of his services

Expert witnesses are competent to testify as to the value of the medical man's services in an action to recover therefor, and such testimony stands on the same plane as testimony in other cases, and is to be weighed by the jury to aid it in coming to a conclusion as to the value of the services rendered, if it is satisfied with it The jury is not bound by the expression of opinion of expert witnesses on such a question, and the testimony of such experts is not, as a matter of law, conclusive on the jury As a rule however, where the experts are men of standing in the profession and do not palpably exaggerate the value of the plaintiff's services, juries are inclined to accept their testimony as fixing a reasonable value The practitioner may be allowed to prove that a patient required unusual attention, and, if he establishes this fact by adequate proof, he may be allowed compensation for operations and time spent in addition to the regular visits

On the question of what the patient impliedly promised to pay, the physician may show his customary charges to other persons in the vicinity, that his rates were well known, and were known by the patient, and in general submitted to It may be said that the value of professional services may be proved by usage, but such usage must be shown by expert testimony on the question of the value of the services or the customary rule of compensation

The patient is not liable to the physician for other than reasonable compensation when a successful experiment has been tried by the practitioner, even though very great skill may have been exercised and unusual attention given, as a patient is not liable for extraordinary services in the way of experiments

Evidence is inadmissible to show the results of treatment by a physician subsequently employed as bearing on the compensation payable to the prior physician, as the treatment of the subsequent physician cannot alter the value of the services of the first physician

An unusual and interesting case in Kentucky arose out of a suit by a physician for the value of his services where he had been called on to treat a patient who was ill of typhoid fever The patient's wife repeatedly objected to the physician's visiting her husband while he was treating other patients for smallpox Notwithstanding this objection, the physician continued to treat both the typhoid fever patient and his other patients afflicted with smallpox Smallpox thereupon broke out in the typhoid fever patient's family The court held that evidence of the wife's objections and the reasons therefor, together with the physician's subsequent course of conduct, was admissible in reduction of the physician's claim for services rendered while treating his patient and family both for typhoid fever and for smallpox

The patient is entitled, on demand, to a specific bill of the medicines and attendance for which the physician claims compensation In the matter of the number of visits, the physician is deemed the best and proper judge of frequent visits, and, in the absence of proof to the contrary, the court will presume that all of the professional visits made were deemed necessary and were properly made

The question of whether or not medical services were rendered gratuitously is one for the jury, and even when there is distinct evidence tending to show that the services were rendered gratuitously, it has been held that such evidence constitutes no legal bar to a recovery, but should be submitted to the jury for their determination

Contracts between a physician and a patient for a limited period of time covering general medical attendance or services are, of course, valid, but a contract to furnish a patient medical services for life has been frowned on in the only two cases on record In declaring that such a contract is totally void in point of law, the court used the following language

> It is plain that the existence of such an agreement is a direct premium to the medical adviser to accelerate that death, upon the happening of which he is to have £25 000
> You must look at the agreement as it stood at the time it was made, and it must be admitted that the human mind is so constituted as that this agreement might be a temptation to some persons to do the very thing which it is obvious it was the duty of the party who took the agreement not to do

In the matter of appeals, it is the uniform rule that the finding of the jury as to the value of the services will not be disturbed when the evidence on that subject at the trial was conflicting and the services were properly and successfully rendered

120 Broadway

UTERINE PROLAPSE

PERMANENT FIXATION BY FASCIAL FLAPS *

W BURTON THORNING, M D
HOUSTON, TEXAS

If there is any excuse for suggesting another method for the relief of uterine prolapse, it lies in the fact that the very multiplicity of previous methods proves that no one of them has given universal satisfaction

Every case of uterine prolapse constitutes a separate and distinct problem, and should be viewed from every conceivable angle before any operative procedure is attempted If this is done and the operator is possessed of sound surgical judgment, he will be compelled to vary his technic to the extent of adopting what seems to be the best method for a given case In other words, he will not adapt patients to operations, but operations to patients

It is not my purpose in this paper to enter into the etiology of uterine prolapse, any further than to refer briefly to the type of patients in whom it appears to me that this particular operation is indicated, nor will reference be made to repair of the damaged pelvic outlet, which will be assumed, or to the methods previously described and widely used

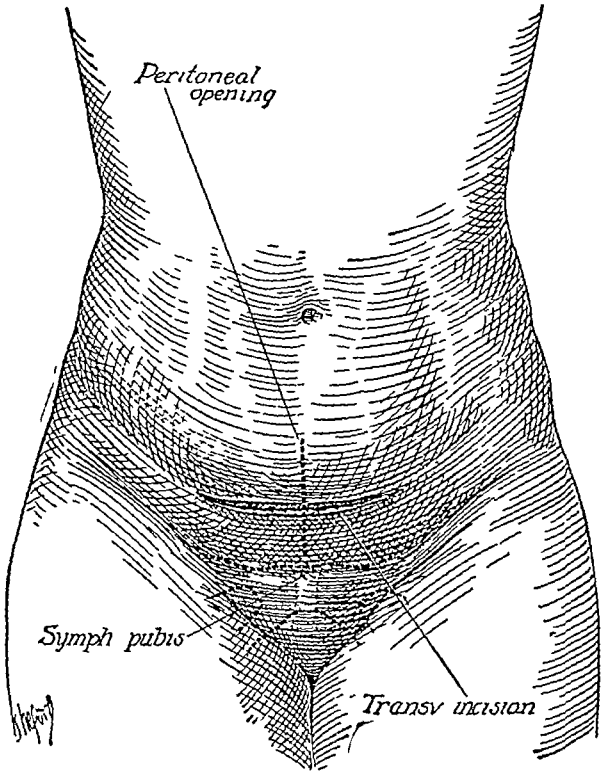

Fig 1 —Transverse incision through skin, subcutaneous tissues and aponeurosis of the rectus muscles dotted line incision in peritoneum

The method to be described will be found to have a very limited field of usefulness, and to those who believe that the uterus should always be removed in every case of prolapse, it will not appeal at all There are those, however, who can see no reason for removal of an otherwise perfectly normal uterus simply because, through loss of its natural supports, it has become prolapsed There are others who will argue that any superstructure should rest on a foundation at its base instead of being suspended from its summit, and as pure theory, this view is correct From a practical standpoint, however, it will be found that this method will not suffice for all cases

It may also be argued that a failure with any of the various popular methods is the fault, not of the method but of the operator, in that he was guilty of faulty

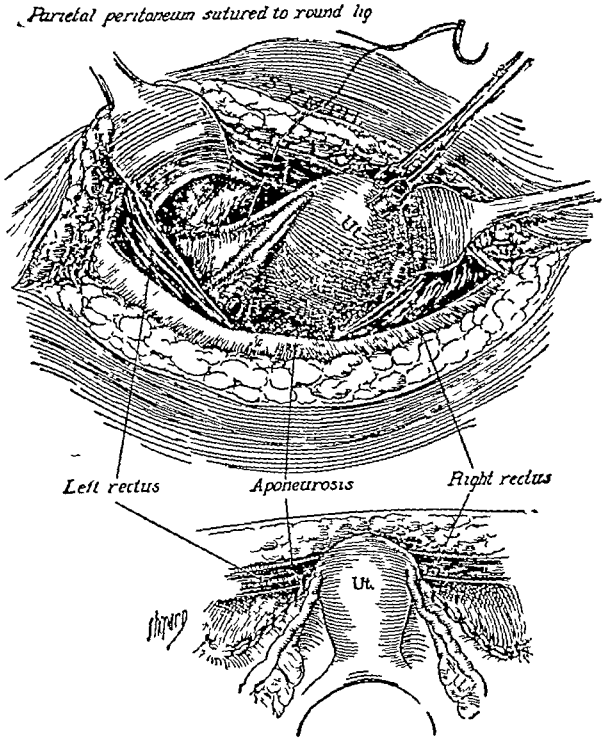

Fig 2 —Running suture of plain gut attaching round ligaments to parietal peritoneum inset suture completed

technic or of an error in judgment in applying that particular method to the case in question This would undoubtedly be true in many instances, but the fact remains that with all the knowledge, judgment and skill that we possess we are compelled to record a failure now and again with any and all methods

It was one of these "failures" in a patient who had been operated on some years before in another clinic that led me to attempt a permanent fixation to the anterior abdominal wall by means of a strip of rectus sheath carried directly through the fundus As stated before, this procedure will not prove adaptable to more than a small proportion of the cases of prolapse It is now slightly more than five years since I did my first one, since that time I have had only seventeen more in which I felt certain that it was to be preferred over all other methods

A total of only eighteen cases is of little value to statistics in demonstrating the desirability of any surgical procedure, and my only purpose in presenting it is to accord the profession the opportunity of determining for itself whether it is worthy or unworthy of trial at other hands If the method is a useful one it should be more widely used; if not useful, it should be rejected

I believe that there is a certain type of women in which this fixation will prove more generally satisfac-

Dr. Robert Reiig Library

* Read before the Southern Surgical Association Dec 14, 1920

tory than any other method with which I am familiar We all recognize the typical enteroptotic figure with the slightly stooping shoulders, the flat chest, the flabby breasts, the pot belly and the broad hips These patients are usually constipated, suffer from headaches and other toxic symptoms, and the prolapsed uterus may, to a certain extent, be part and parcel of the gen-

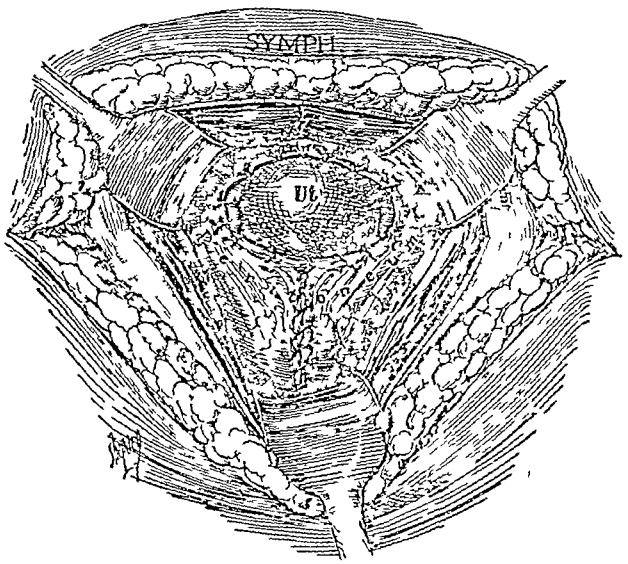

Fig 3.—Peritoneum closed snugly around fundus with continuous or interrupted suture of plain gut

eral visceroptosis In all these cases we find the entire muscular system soft and flabby, the uterine ligaments relaxed and attenuated, and the entire pelvic diaphragm presenting the appearance of having been torn loose from its attachments In this class of women we get no permanent support from the perineal body, no matter how carefully it may have been rebuilt, we can expect no permanent help from the anterior pubic or the utero-sacral ligaments, there is a giving way of the whole perineal segment, the pelvic diaphragm and pelvic organs are low in the vagina, intra-abdominal pressure is exerted in the wrong plane, and recurrence, with anything short of fixation, is almost inevitable

In common with all other fixations, this method should not be employed if there is any question of malignancy or fibroids or in women in the child-bearing age, unless sterilized or in badly infected uteri Of the eighteen patients all were past the menopause except one, and she had previously been subjected to a bilateral salpingectomy There has been no mortality, and in fourteen cases the results have been exceedingly gratifying

Of the eighteen, two have been operated on more than five years, two more than four years, three more than three years, four more than two years, three more than one year, one has been lost sight of, and three have been operated on since January, 1920, too recently to be included in statistics

Of the fourteen included in this study, all have been examined at least one year following operation, and several have returned for examination three or more times In every instance, they have been entirely relieved of their symptoms and there has been no recurrence of the prolapse

In one case in which a ventral suspension had been performed ten years before, the uterus was much elongated and a year after operation still appeared to be carried somewhat low, but the patient was symptomatically well

In only one case has there been any postoperative complication It was the first case, and as we did not allow for drainage, we were somewhat humiliated by having a hematoma form under the skin flaps, which delayed the convalescence by several days

This leads me to call attention to one step in the procedure which, theoretically, is a violation of a surgical principle, namely, the cross-section of the vessels running to the fundus Practically, it presents no difficulties if a small rubber tissue drain is carried down to the incision in the uterus and allowed to remain for from twenty-four to forty-eight hours

TECHNIC

An ordinary transverse incision, which for the most part is below the upper margin of the pubic hair line, is carried through the skin and subcutaneous tissues and the aponeurosis of the rectus muscles (Fig 1) The upper flap is then separated from the muscles upward for a distance of 3 inches or more as necessary to provide working space The transverse incision in the fascia of the rectus muscles should be not less than 1¼ inches nor more than 2 inches above the pubic symphysis The rectus muscles are then separated, and the peritoneum opened in the usual way Through this incision any necessary pelvic work may be done The fundus is then grasped with volsella and the rectus muscle retracted in the opposite direction while a running suture of plain gut attaches the round ligament to the parietal peritoneum of the anterior abdominal wall on each side (Fig 2) This step in the procedure is not taken with the idea of securing additional support but for the purpose of shutting off the pelvic cavity below

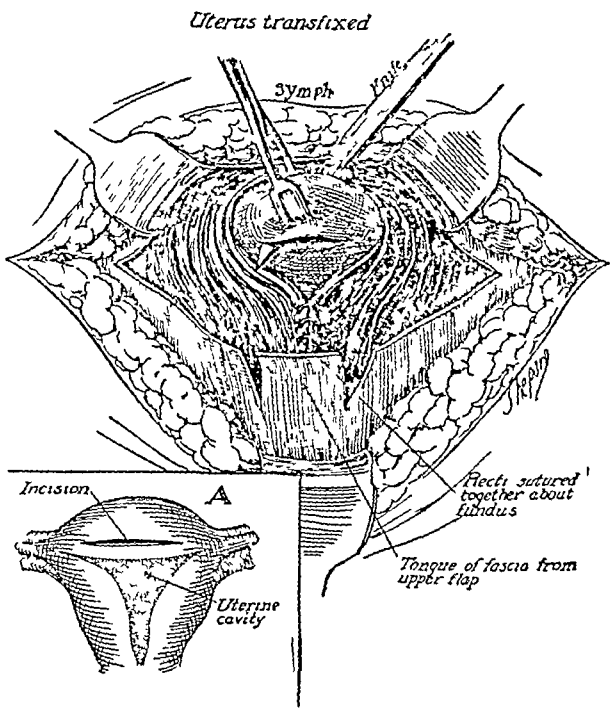

Fig 4.—Rectus muscles brought together incision through fundus tongue of fascia split from upper flap, *A* relation of incision to uterine cavity

the point of fixation The peritoneum is then closed with a running suture, bringing it snugly around the fundus as shown in Figure 3

The rectus muscles are then brought together by interrupted sutures as nearly to the fundus as possible (Fig 4)

Next, a strip or tongue from 1 to 1½ inches wide is split from the middle of the upper fascial flap The fundus is then transfixed with a scalpel which carries the incision from

one side to the other, the incision is placed as deeply as is possible without entering the uterine cavity (Fig 4) The strip of fascia is then carried through the incision in the fundus and sutured to the point on the lower fascial flap where it was originally divided (Fig 5)

The divided fascia is then reunited by interrupted chromic catgut sutures (Fig 5)

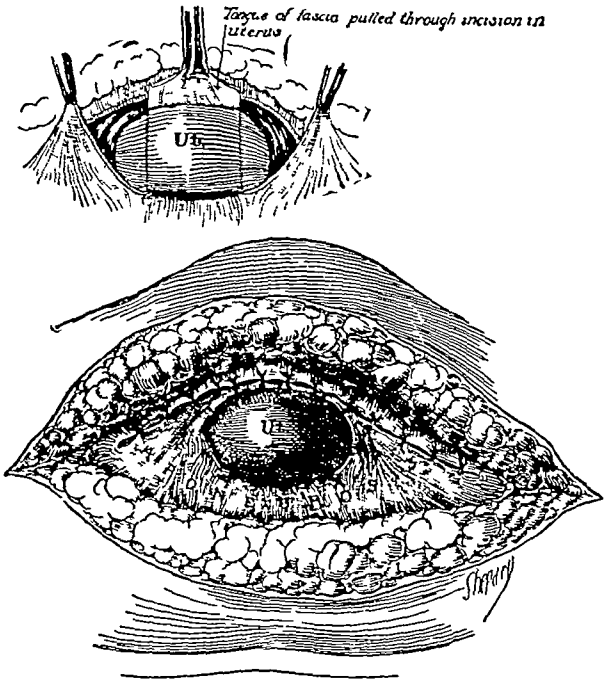

Fig 5—Divided fascia reunited with interrupted sutures of chromic gut, inset tongue of fascia being drawn through incision in fundus

The skin is closed in the usual manner

Some variation in placing the incision in the uterine wall will be necessary according to the degree of mobility present

When there is great relaxation, it can be carried down the anterior wall and emerge as low as the uterovesical fold of

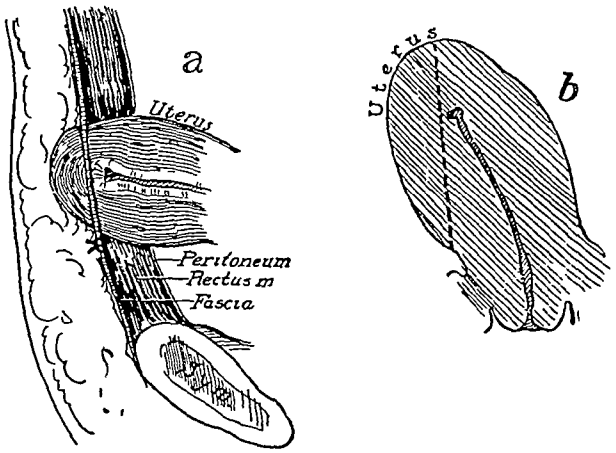

Fig 6—*a* ordinary incision through fundus *b* incision where relaxation is extreme

peritoneum (Fig 6*b*) In two cases we dissected the bladder loose from the anterior wall and brought the fascial flap out through the cervical portion, transplanting the bladder by tacking sutures to the anterior fold of the broad ligament

A little experience will enable one to estimate with considerable accuracy the location of the incision which will afford the necessary degree of support

Kress Building

INTRACRANIAL BIRTH TRAUMA OF THE NEW-BORN

FROM THE STANDPOINT OF THE OBSTETRICIAN *

HUGO EHRENFEST, M D
ST LOUIS

Within the last decade an extraordinary amount of information concerning intracranial birth lesions has been offered in the medical literature of Europe and of this country In the light of this newer knowledge, prevailing conceptions in regard to the causation of these injuries, their diagnosis, and their immediate, and especially remote, effects on the infant are in urgent need of thorough revision In a large monograph dealing with the birth injuries of the new-born child, to be published in the near future by D Appleton and Company, I shall have ample opportunity to discuss thoroughly also the subject of traumatic intracranial lesions I feel confident that in this volume I shall be able to justify fully many of the statements which here are made seemingly in a rather apodictic manner However, the allotted fifteen minutes offer no chance for quoting references or arguing mooted points, if one endeavors to present, within this limited time, an adequate answer to the one question, most important to us as obstetricians To what extent can the obstetrician prevent such intracranial birth lesions?

The terms intracranial birth lesions and intracranial birth hemorrhages rather generally are employed promiscuously For merely clinical purposes this may be justifiable, because the clinical importance of these lesions is almost limited to the hemorrhages But this lack of discrimination in using the terms obscures much that is significant and essential for the correct understanding of the causation of these lesions Only since Beneke's special method of opening the skull of the new-born at necropsy (published in 1910) has been more generally adopted, has the important problem of the tentorial lacerations, which are not necessarily associated with hemorrhage, been adequately appreciated A study of all the larger statistics on the incidence of intracranial birth lesions establishes the noteworthy fact that with every succeeding year, figures, based on a large amount of necropsy material of new-born infants, show an ever increasing percentage of such findings During the last few years they range as high as from 30 to 40 per cent of postmortem examinations of all infants, that were either stillborn or that died within the first few days of life It has become evident that such traumatic tentorium tears may represent only accidental findings in no way related to the actual cause of death Experimental studies have furnished additional information especially concerning the mechanical causes of dura lesions

ETIOLOGY

The problem of the etiology of the most important of intracranial birth traumatisms, which are the dura lesions, can be presented briefly, thus These injuries, practically without exceptions, primarily are due to definite mechanical causes The dura mater is stretched, and with it the large blood sinuses and particularly the veins emptying into them, are pulled and eventually are ruptured This stretching to the breaking

* Read before the Section on Obstetrics Gynecology and Abdominal Surgery at the Seventy Second Annual Session of the American Medical Association Boston June 1921

point is either the result of excessive overlapping in the sutures of adjoining skull bones, or is effected by the strong compression of the head in one direction, chiefly the transverse, which leads to a compensating elongation of the cephalic diameters in the other direction, the longitudinal Excessive overlapping of the parietal bones endangers the longitudinal sinus and in particular its contributory veins on one side Excessive overlapping in the lambda suture in a similar manner comprises the transverse sinus and its veins The change in the configuration of the fetal skull by lateral compression in the process of molding stretches the falx Exaggerated tension is most likely to impair its integrity at its weakest point, that is, where the falx fibers divide to form the upper blades of the tentorium on either side Thus the sinus rectus itself, or large veins, may be torn

This conception of the primarily mechanical causation of the intracranial birth traumatism satisfactorily accounts for the high incidence of serious lesions after breech extractions, and also after forceps extractions, especially if the forceps have been applied to overcome an existing disproportion between head and pelvis This mechanical conception emphasizes the almost specific danger of the sudden compression of the head However, this still leaves unexplained the undeniable fact, evidenced in every new study of the problem, that in from 20 to 25 per cent of the cases examined at necropsy even most extensive destructions are discovered in infants born spontaneously, after quick labors, normal in every respect The literature contains many records of fatal intracranial hemorrhages after cesarean sections, or in the second born of twins An acceptable interpretation also of such occurrences is now available in the assured fact that there are definite conditions which clearly *predispose* the infant to such traumatic lesions Most important among them evidently is prematurity, apparently responsible for an abnormal fragility of the dura and of the vessel walls Syphilis in this connection positively plays a role only so far as it is responsible for the premature termination of pregnancy

We also know that outside such predisposing causes there are *contributory* factors involved in the etiology of intracranial birth lesions, and in particular of birth hemorrhages Most momentous among these contributory factors undeniably is a hemorrhagic diathesis of the new-born It seems obvious that the rupture even of the smallest vessel, of no significance under normal conditions, in the presence of delayed blood clotting will permit the gradual extravasation of enough blood to cause clinical symptoms to appear later, often several days after birth, or finally to cause death

Another contributory factor of no mean importance has been found in improper manipulations of the newborn during resuscitation To swing the seemingly asphyxiated baby after the method of Schultze or to manipulate it with the head hanging down, as is so often done, cannot fail to prove detrimental in the presence of an intracranial injury The charge has been made, and undeniably with some justification, that the almost unavoidable lateral compression of the head during swinging, if unintentionally too brusque, in itself may become responsible for a tentorial tear A few words must be said in this connection concerning the relation of asphyxia to intracranial hemorrhages The commonly expressed opinion that the congested state of the brain vessels in asphyxiated new-born infants is the most important direct cause of their rupture, at least in this form, is untenable This claim is chiefly based on the frequent observation at necropsy of small hemorrhages in serous and mucous membranes, generally considered pathognomonic for asphyxiation Reference has been made to the role played by hemorrhagic diathesis as a contributory cause, and this newer knowledge throws a different light on the significance of these coexisting petechial hemorrhages The conclusion seems fully justified that in a definite percentage of these cases the intracranial hemorrhage in the main is only a local expression of the underlying hemorrhagic diathesis Very enlightening in this respect and almost conclusive as scientific proof must be regarded an observation made in the case of the death of a second born twin His blood showed a distinct delay in clotting time In the surviving first born twin the blood clotting time was found to be normal Undoubtedly, not a few infants are in an asphyxiated condition at birth because an intracranial, probably an infratentorial, hemorrhage is embarassing the respiratory center in the medulla In them, attempts at resuscitation necessarily will fail It is most likely that the clinical diagnosis of the cause of death will be asphyxia Practically none even of the elaborate recent statistical classifications of the causes of stillbirth and early deaths tabulate specifically the cases of intracranial lesions In view of their high frequency, as established by routine postmortem examinations it seems fair to assume that practically all of them are included in that always large figure representing asphyxiation as the cause of death

Summarizing the various facts mentioned in the foregoing paragraphs I can say in regard to intracranial birth injuries that (1) they are produced by the mechanical exaggeration of the physiologic process of molding, resulting in excessive or sudden compression of the fetal skull, (2) they are prone to occur in the course even of a normal labor if prematurity predisposes the infant to traumatic lesions, and (3) they are necessarily aggravated by a hemorrhagic diathesis or by inappropriate manipulations during resuscitation

From this point of view it seems feasible to offer definite suggestions to the obstetrician, observance of which will tend to lessen his own responsibility in the causation of such injuries

FORCEPS

Any marked disproportion between head and pelvis renders especially rapid forceps extraction extremely dangerous to the child The least possible amount of compression will be secured if the blades are applied as closely as possible, corresponding to the transverse diameters of the head If the handles of the forceps are not lying in close approximation, they must be steadied in their position to avoid their compression during extraction During the progress of the extraction the normal sequence of changes of position of the head in relation to the various planes of the pelvic canal must be strictly followed The extraction should be made slowly to permit the gradual molding of the head It is definitely established that sudden compression of the skull is infinitely more dangerous than long continued compression

BREECH PRESENTATIONS

In breech extractions the aftercoming head must be kept in extreme flexion and its passage through the

pelvic canal must be managed exactly in conformity with the normal mechanism of the second stage It is important near the end of the extraction, to avoid strong pressure of the squama of the occiput against the symphysis in the attempt to save the perineum The commonly prevailing opinion that haste is required to preclude unduly prolonged compression of the cord is in need of modification In the special technic of podalic version as advocated by Potter, his urgent advice to extract slowly, seems one of the outstanding features

PREMATURE LABOR

The evident vulnerability of the premature infant makes it necessary to avoid any severe or abrupt compression of the skull In these cases, pituitary extract, forcing even a small head through an incompletely dilated cervix or through a rigid vulvar ring, may prove disastrous to the child Large doses of pituitary extract endanger the child even in birth at term, especially when employed to overcome mechanical difficulties

PROTECTION OF PERINEUM

It seems plausible that extreme efforts to protect the perineum against rupture may play a role in the causation of intracranial lesions and especially of tentorial tears Most harmful in this respect proves the attempt to push the head through the vulvar ring between uterine contractions by strong pressure made against the forehead of the child either over the perineum or with a finger introduced into the rectum *This maneuver pushes the occiput forcibly against the* subpubic arch Injurious probably also is an asymmetrical pressure against the perineum, if exerted more strongly over one parietal bone than over the other, thus straining the falx in an oblique direction Passage of the head through the vulvar ring is best retarded by pressure with the palm of the hand over the entire exposed surface of the fetal head Any one familiar with the etiology of traumatic intracranial lesions will resort most readily to an episiotomy

RESUSCITATION

All brusque maneuvers must be avoided during the resuscitation of asphyxiated new-born infants If the asphyxiation is not due to an intracranial injury, clearing of the pharynx, skin stimulation and artificial respiration, carefully done, in most cases will be sufficient to establish respiration

COMMENT

This modern conception of the causation of intracranial traumatisms during birth, in my belief, places on the attending obstetrician further obligations Strict observance of the various suggestions made in the preceding paragraphs might materially reduce the occurrence of such injuries, but it evidently now has become the obvious duty of the obstetrician also to recognize their existence at the earliest possible moment It is impossible to enter here even into the briefest discussion of the symptomatology of these lesions In the effort to improve their prognosis, which at the present time is very unsatisfactory, the essential task for the practitioner consists in familiarizing himself thoroughly with the early symptomatology so that proper therapy can be instituted without delay There are, however, at least two procedures of significant value which he can immediately apply

In every case of suspected brain lesion, which in practice almost means in every new-born infant that obviously does not behave normally, he should at once attempt to determine at least roughly whether the infant's blood appears strikingly slow in clotting He will do no harm, but he is likely to do much good, if he will promptly inject human or horse serum whenever in his opinion there is unusual delay The second procedure, less simple, but still almost free of danger if carefully and skilfully done, consists in a spinal puncture The presence of blood in the spinal fluid in many, though not in all, instances will prove the existence of a hemorrhage Puncture with withdrawal of blood not only enables the obstetrician to secure competent counsel promptly, but represents the first step in a most advantageous and useful therapeutic procedure in relieving harmful pressure on certain brain centers

CONCLUSIONS

The information at present available concerning the causation of traumatic intracranial birth injuries makes it incumbent upon every physician attending women in labor, to accept these principles During forceps and breech extractions all excessive and brusque compression of the head must be avoided Special caution must be applied in managing premature labors All violent manipulations must be eliminated in the resuscitation of asphyxiated new-born infants The diagnosis of an existing intracranial injury should be made at the earliest moment Whenever such an injury is even only suspected, the clotting time of the infant's blood must be ascertained and a spinal puncture performed, both as a diagnostic and as an early therapeutic measure

Metropolitan Building

ABSTRACT OF DISCUSSION

DR ISAAC A ABT, Chicago While we all agree that forceps operations and the various obstetric devices may contribute to the occurrence of intracranial hemorrhage, nevertheless there are patients who tend to bleed and bleed spontaneously irrespective of any instrumental interference or any force And those are the babies Dr Ehrenfest spoke of as having general hemorrhagic diathesis and as tending to bleed spontaneously I agree with him The number of cases is large and they are of the greatest importance Rodda showed that many babies are born with a markedly increased coagulation time that instead of coagulating in from two to nine minutes, the coagulation time is increased to thirty minutes or even hours, and these babies tend to bleed not only in the cranial cavity but also in the various viscera and organs In other words, they are potential bleeders, and even the slightest trauma may produce hemorrhage in these infants Indeed they may bleed without much of any trauma So far as the diagnosis of meningeal hemorrhage is concerned it is not always easy One usually relies on the protuberant fontanel Nervous symptoms some paralysis, a baby that is not hungry does not nurse, who has some nystagmus, who cries or jerks in a peculiar manner—all these things tend to corroborate or at least to influence our minds toward, the diagnosis of meningeal hemorrhage But sometimes with these symptoms more or less present, meningeal hemorrhage may be doubtful The baby may be toxic or sick or it may have hemorrhage in some other part of the body I have seen babies with hemorrhage in the suprarenal who presented all the symptoms In another instance the necropsy disclosed an infantile form of encephalitis And in yet another case no meningeal hemorrhage was found Lumbar puncture has some slight therapeutic value In a tiny baby it is difficult to perform Only the most expert can do it Blood may be obtained without any reference to its presence in the cranial cavity Therefore I am very doubtful about the diagnostic value or even the therapeutic value of such puncture Some of the foreign clinics show that from 30 to 40 per cent, of all

babies that die die from meningeal hemorrhage As to treatment When there is any doubt, blood serum or horse serum should be given, or one of the hemostatic agents The hemorrhage is light at first If you wait, the damage that is done to the cerebral cortex and cells is in exact proportion to the amount of hemorrhage that takes place Consequently, if there is any sign of meningeal hemorrhage, inject at once, and often, if necessary On account of the severity of these lesions and the tragic lives these poor infants have to live, operation should be considered That operation should be, if possible, a craniotomy The mortality is high, nevertheless, the operation is justifiable

DR. HERMAN SCHWARZ, New York Handling the child may cause these hemorrhages We must prevent prematurity if we want to prevent these hemorrhages The premature child has no hemorrhagic diathesis, but the prematurity causes the bleeding of these children Perhaps we can recognize these cases earlier, and be able to do something Every child when born should be tested for its hypotonicity Hemorrhages that occur in the posterior fossae are more likely to cause tonic spasms Whether the child takes the breast well is a very important differential factor in convulsions of the new-born If the child takes the breast well I am not so worried that it might be a hemorrhage in the brain If the child does not take the breast well, one should look for symptoms outside as well as in the brain that may cause convulsions I agree with Dr Abt in the difficulty of lumbar puncture This idea of getting blood and making a diagnosis of hemorrhage is extremely far-fetched Although 40 per cent of the necropies show intracranial hemorrhage, the diagnosis is very often made when such a hemorrhage is not present, and many of the diagnoses of intracranial hemorrhage and death would be cleared up if we could perform a necropsy I do not think that there is a definite hemorrhagic diathesis in an appreciable number of these cases These are not necessarily premature infants that have a hemorrhage of the brain What we want to do is to prevent prematurity, and then we will prevent that type of hemorrhage

DR W W BROWN, Rochester, N Y It has been stated that one of the principal causes of this hemorrhage is prematurity I believe that to be true, but the cause of prematurity is probably going to be found to be the cause of the hemorrhagic diathesis, so-called, in the baby In our wards every baby has the coagulation time taken within from six to twelve hours after it is born Every baby that shows a prolonged coagulation time is given human serum I do not believe in laboratory hemostatics or in horse serum I get 30 or 40 c c of blood serum from the mother or any one else, and 10 c c is injected intramuscularly every three or four hours for four or five doses Not knowing what the cause may be, I have also learned to associate prolonged jaundice, that does not clear up on clearing out the intestinal tract, with these hemorrhagic conditions

DR JOSEPH B DE LEE, Chicago The time has come to sound a warning against the too active trend in modern obstetrics This might sound a little bit antagonistic to some of my own pronouncements, but they were intended for the maternity hospital men, who have all the help and facilities for doing advanced work There is a striking difference between the work of the man under circumstances that do not permit the highest kind of technic, and the work of the man situated where he can give the patient all the benefits of his art Hemorrhages in the new-born are on the increase The advent of pituitary extract has been one of the most unfortunate things for new-born babies Hardly a week goes by that some doctor does not tell me about a death in his practice directly due to the use of pituitary extract before the delivery of the baby I have even felt that it would not be undesirable to pass a law forbidding the use of pituitary extract before the child is born Another factor which is causing hemorrhage in the new-born is the use of forceps, the overcoming of resistance by brute force Forceps are used too much—and not enough Discrimination is wanting A bizarre practice, recently exploited, is the routine delivery by version and extraction It is threatening to have a dangerous spread, in spite of the published fact that it has a fetal mortality, in the hands of its exponent, of nearly 8 per cent Evidently, such interference in natural labor is perilous to the child, and it explains the large number of hemorrhagic diatheses which caused the excessive mortality reported Rodda did not explain the cause of the hemorrhagic diathesis We did not always have so many cases of hemorrhagic diathesis Among the known causes are prematurity, syphilis, hemophilia in the mother, influenza and malaria Asphyxia and traumatism are two potent causes of hemorrhage To prevent death from this hemorrhagic diathesis in the baby, we must prevent asphyxia and traumatism One of the forms of traumatism is a hard resisting perineum, with a prolonged second stage of labor Dr Ehrenfest has well recommended the use of episiotomy to relieve this I think every man ought to be qualified to perform the operation of episiotomy well, to save the baby from the effects of compression of the brain As to the idea of labor being abnormal Everybody considers labor normal It is a natural function It is natural for women to have babies No one would say that it is a disease to have babies But does not so-called normal labor produce damage? That natural labor causes injury to both mothers and babies, nobody can deny If a normal labor hurts the baby, we say that was a pathogenic action of normal labor If a baby has his head crushed in the door we say that the crushing was pathogenic, and the state of the baby's head we say is pathologic If the baby's head is crushed against a hard perineum by natural labor the crushing is pathogenic Anything pathogenic is pathologic, and labor is pathologic, but that does not mean it is a disease It is disease producing Why do I insist on that view of labor? To elevate the practice of obstetrics in the minds of physicians so that the best men will engage in it, and to elevate the practice of obstetrics in the minds of the laity so that when laws are made by our legislators, proper dignity may be accorded the function of childbearing

DR GORDON G COPELAND, Toronto, Canada What is your view as to the relationship between hematoma and intracranial hemorrhage? Is intracranial hemorrhage due to changes in the blood that would warrant opening the skull to relieve possible tension? I have found it practical to give whole blood from the mother or father in these hemorrhagic cases in the new-born, injecting it into the intrasagittal space of the child I have had some very good results from that procedure

DR HUGO EHRENFEST, St Louis As to spinal puncture, I am fully aware of its difficulties and possible danger Nevertheless, any one who follows the literature cannot fail to be impressed by the results that have been obtained I am far from recommending that procedure for all the men doing obstetric work As to the responsibility of the obstetrician for a correct diagnosis, I had to avoid the problem of diagnosis in this paper, it would by itself make an interesting paper I want to point out to you just the one thing If the surgeon or pediatrician is called to see the child that has had several convulsions, that is unconscious or comatose, he is at a great disadvantage if the man attending the case has not observed a certain symptomatology that has manifested itself previously, e g, a lack of ability of the child to nurse, twitching which began in this extremity or that gradually went to another A facial paresis, present when the consultant appears, means a great deal if the attending physician can assure the surgeon that this facial paralysis was not there when the child was born, and developed only later If these early symptoms are watched carefully by the attending physician, there is often observed a sequence of symptoms that correspond almost exactly to the further distribution of extravasated blood from the primary focus As to the hemorrhagic diathesis I am not surprised to see it form the main point of discussion Hemorrhage is the essential factor in the clinical symptomatology, but I tried to point out that the hemorrhage does not give the real clue to the causation of the injury The frequency of tentorial tears without any hemorrhage emphasizes the mechanical factors as the underlying primary causes of intracranial birth lesions The hemorrhagic diathesis, then, represents only a very important contributing factor, resulting in a large hematoma, even if the primary mechanical lesion is only slight The obstetrician unfortunately has been persuaded by the neurologist that

it is the long compression of the head that proves so dangerous to the child in after life There cannot be any doubt that the sudden forcible compression is the more dangerous factor There is a relation between cephalohematoma and intracranial hemorrhages Small hemorrhages under the periosteum are found, but they are of no particular significance They represent accidental necropsy findings, but never cause the death of the child I purposely eliminated the entire subject of perforating injuries from my paper

BLOOD PRESSURE CHANGES DURING ABDOMINAL OPERATIONS *

ALEXIUS McGLANNAN, M D
BALTIMORE

Operation in the early stage of disease, when the pathologic process is limited to an accessible primary focus, is simple for the surgeon and safe for the patient As the disease process invades additional areas and organs, or when the condition involves inaccessible structures, the operation becomes more difficult and the safety of the patient correspondingly less secure

To safeguard the patient through one of these difficult operations, many procedures have been devised

TABLE 1—HERNIA OPERATION

Anesthetic	Cases	Primary Effect			Excision of Sac			Closure		
		Rise	Fall	No Change	Rise	Fall	No Change	Rise	Fall	No Change
Nitrous oxid and procain	10	10	0	0	1	4	5	3	0	7
Ether	12	3	4	5	0	9	3	6	2	4
Procain	18	2	4	12	1	7	10	7	2	9

Preliminary treatment may offset a known handicap Psychic control will relieve the patient of fear and anxiety Special forms of anesthesia and particular methods of operating will diminish the shock of the procedure The recognition of the advent of shock will enable the surgeon to arrange for its prompt treatment and to modify his procedure so as to limit its development The performance of multiple stage operations has added greatly to the safety of the patient in carrying out extensive manipulations

There is a constant relation between falling blood pressure and the condition of shock A knowledge of variations in the blood pressure of the patient during

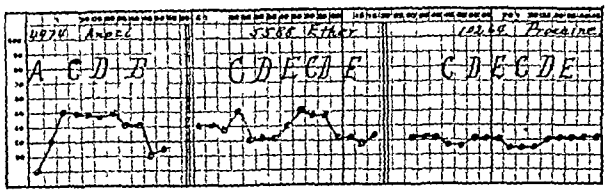

Chart 1—Blood pressure changes during operations for hernia *A* gas started *B* gas stopped *C* sac opened *D* sac closed *E* muscle suture

operation will enable the surgeon to decide on the safety of continuing his manipulations, or the necessity for limiting them

Many factors developing in the course of an operation contribute to alterations in the blood pressure, either increasing or diminishing it Studying the changes which occur in relatively simple operations, we obtain knowledge which becomes most valuable when we are called on to safeguard a handicapped patient through a severe operation Practically all of the changes in blood pressure noted in our records have been predicted or actually observed by investigators studying shock through animal experimentation Furthermore, this similarity has allowed us to make accurate use of the various means for the prevention and cure of shock which have been the result of these animal experiments

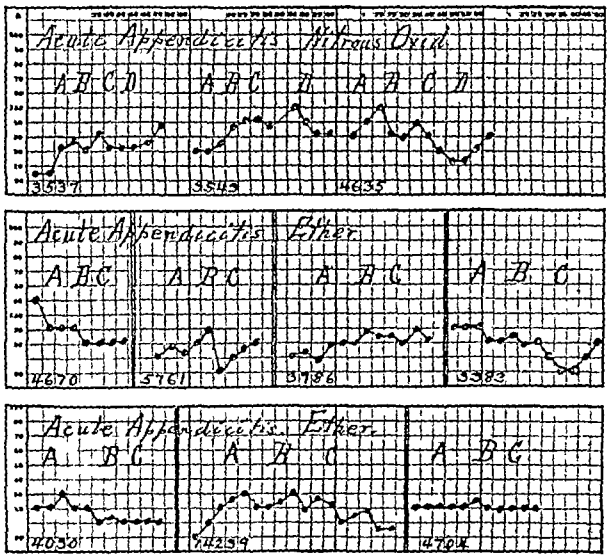

Chart 2—Blood pressure changes during operations for acute appendicitis *A* peritoneum open *B* (Cases 3537 3543 4635) manipulation *B* (other cases) appendix delivered *C* (Cases 3537 3543 4635) appendix out *C* (other cases) peritoneum closed *D* peritoneum closed

This paper is based on a study of the blood pressure records kept during the course of 394 abdominal operations performed by the members of the Staff of St Agnes' Hospital, Baltimore The systematic recording of the blood pressure during operation was introduced in the clinic several years ago by Dr J C Bloodgood, and such a record is kept as a routine procedure in all our operations The systolic pressure is measured by means of a spring instrument

TABLE 2.—ACUTE APPENDICITIS

Anesthetic	Cases	Opening Peritoneum			Manipulation			Closure			Compensation With Closure	
		Rise	Fall	No Change	Rise	Fall	No Change	Rise	Fall	No Change	Rise	Fall
Nitrous oxid and procain	22	8	8	6	11	8	3	7	8	9	6	8
Ether	28	5	14	9	6	10	12	8	10	10	5	5

A simple hernia occurring in an otherwise healthy young adult gives us an opportunity for studying the effects of surgical operation on the blood pressure without complicating factors Forty such cases were studied (Table 1 and Chart 1)

THE EFFECT OF ANESTHETICS

Nitrous oxid and oxygen with procain infiltration usually caused a rise of from 10 to 30 points in pressure As a rule, this higher pressure continued throughout the operation Ether, on the other hand, seldom caused a rise, and about as often caused a fall in pressure In about one half of the ether cases there

* Read before the Section on Obstetrics Gynecology and Abdominal Surgery at the Seventy Second Annual Session of the American Medical Association Boston, June 1921

was no primary change, and the primary rise, when it did occur, was never sustained throughout the operation When the operation was performed under local anesthesia, the pressure in the majority of cases remained unchanged

EFFECT OF MANIPULATIONS

Changes in the blood pressure which occur during the excision of the sac are the result of traumatizing the parietal peritoneum, that is, the effect of irritation of sensory nerves on the vasomotor system In 60 per cent of the cases in which general anesthesia was used, the manipulation was accompanied by a fall in pressure In one case, however, there was a short rise The fall in pressure was most often noticed in patients anesthetized with ether Operation under procain or procain-nitrous oxid (anociassociation) was without change of pressure in 50 per cent of cases

ACUTE APPENDICITIS

In fifty cases of uncomplicated acute appendicitis, there were twenty-two ether anesthesias and twenty-eight gas and procain (Table 2 and Chart 2) After

TABLE 3—APPENDICITIS WITH PERITONITIS

		Opening Peritoneum			Manipulation*			Closure			Compensation With Closure	
Anesthetic	Cases	Rise	Fall	No Change	Rise	Fall	No Change	Rise	Fall	No Change	Rise	Fall
Nitrous oxid and procain	17	8	2	7	2	3	7	0	6	6	0	2
Ether	19	5	6	8	8	13	3	2	10	12	2	2

* In five cases the anesthetic was changed to ether at this stage

the operation had begun, the anesthetic was changed from gas to ether in six cases As a rule, the change was made in order to obtain better relaxation of the abdominal wall for exploration Opening the peritoneal cavity caused some change in the blood pressure in

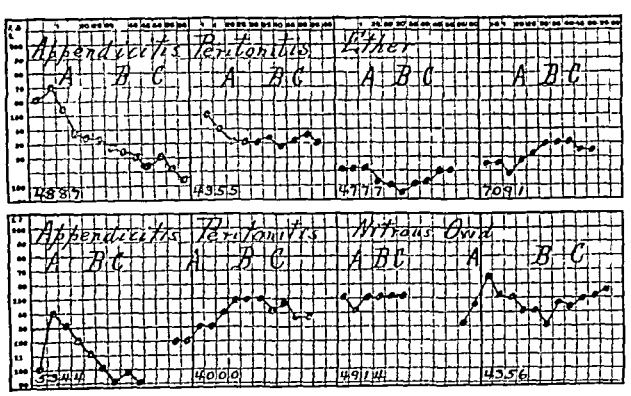

Chart 3—Blood pressure changes during operations for appendicitis and peritonitis *A* peritoneum open *B* appendix out *C* drains in place closure begun

thirty-five of the fifty cases There was a rise in eight of the gas and in five of the ether group, and a fall in eight gas and in fourteen ether cases

Similarly, there was a pronounced effect from manipulations incident to the delivery of the appendix (packing, traction, etc) During the closure of the wound, a change in pressure occurred in thirteen gas and eighteen ether cases In five gas cases there was a rise in pressure at this time, which compensated for a previous fall, while there were eight cases in which a fall brought the pressure back to the preoperative level With ether, in five of the ten cases, the fall at this stage of the operation balanced a previous rise, but in the other five cases the fall continued an already existing drop in pressure In five of the ether cases the earlier drop was followed by a rise during the closure of the wound

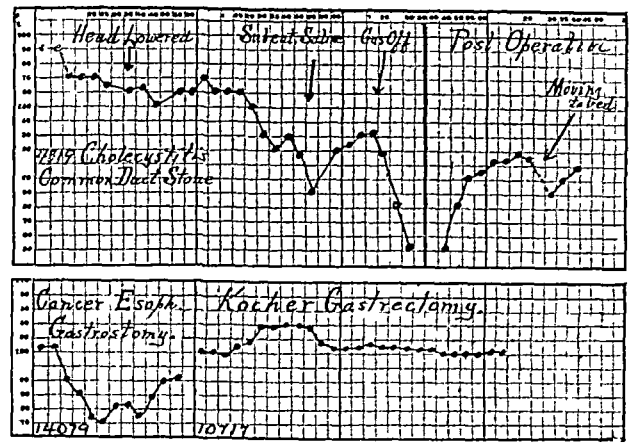

Chart 4—Blood pressure changes in choledocostomy with shock in gastrostomy and in pylorectomy

When appendicitis was complicated by peritonitis (Table 3 and Chart 3) the sensitiveness to anesthetics as well as to peritoneal manipulations was increased 50 per cent , that is, in the peritonitis series the number of patients showing a blood pressure response to these stimuli was increased in this proportion over the number showing a response in the uncomplicated series

The reaction to opening the peritoneum was very slightly altered in character, but the manipulations pro-

TABLE 4—RELATIVE FREQUENCY OF BLOOD PRESSURE RESPONSE AND FALL DURING OPERATIONS ON THE APPENDIX AND GALLBLADDER

Operation	Cases	Response per Cent	Fall in Pressure per Cent	Compensation With Closure per Cent
Appendectomy	50	70	36	46
Cholecystostomy	30	60	45	23
Cholecystectomy	15	60	60	14

duced marked lowering of the pressure in most cases This fall was more marked under ether than in the cases in which gas was used for anesthesia The recovery incident to suspension of manipulations and occurring during closure of the wound was materially diminished A rally was noted in a proportion of but one to five cases as compared with the uncomplicated series

OPERATIONS ON THE GALLBLADDER

In general, the blood pressure changes during gallbladder operations resembled those occurring during the operations on the appendix (Table 4)

The manipulations in the upper quadrant produced a more frequent fall in pressure than those made in the lower portion of the abdomen For example, in uncomplicated appendicitis, the manipulations incident to removal of the appendix brought out a blood pressure change in 70 per cent of the cases, with a fall in the pressure in 36 per cent With cholecystostomy the response occurred in 60 per cent , with a fall in 45 per cent of the cases Cholecystectomy was associated with

a response in 65 per cent of the cases, and in 60 per cent this change was a fall in pressure In two cases in which an impacted stone was removed from the common duct, the pressure was greatly affected by the manipulations

The combination of oozing, difficult manipulations and long standing infection led to shock in the case of a jaundiced woman with a common duct stone covered in by adhesions between the omentum, gallbladder and neighboring viscera (Chart 4)

OPERATIONS ON THE STOMACH

Gastrostomy—In two cases the Ssabanajew-Franck operation was performed on account of malignant obstruction The blood pressure fell rapidly as the peritoneal cavity was opened (Chart 4) The fall may be explained in part by the escape of fluid from the peritoneal cavity, but the great change shows the sensitiveness of the starved and cachectic patient Gastrostomy should be done under infiltration anesthesia before the patient has become exhausted by his disease

Transfusion preliminary to operation no doubt would increase the patient's resistance to the effect of the manipulations

Pylorectomy for benign or malignant stenosis was done four times In three the Kocher method was used, and in the fourth the Polya

TABLE 5—COMPARISON OF BLOOD PRESSURE CHANGES DURING APPENDECTOMY AND HYSTERECTOMY

Operation	Cases	Opening Peritoneum: Response per Cent	Opening Peritoneum: Fall per Cent	Manipulations: Response per Cent	Manipulations: Fall per Cent	Compensation With Closure, per Cent
Appendectomy	50	70	44	70	86	46
Hysterectomy	32	60	47	70	35	7

Pyloroplasty—In four cases the Finney operation was performed There was little or no change in the blood pressure, during this operation

Gastro-Enterostomy—The posterior operation was done eight times, and the anterior once in the series There was some reaction as the stomach and jejunum were isolated and brought up for suture In the ulcer cases this was slight, but in a cancer case the fall was considerable

HYSTERECTOMY

In spite of the fact that the operation requires a longer time for its completion and that the organ removed is so much larger, hysterectomy gave rise to blood pressure changes almost the same as those noted in appendectomy The hysterectomy patients showed a more frequent fall in pressure as the peritoneal cavity was opened but practically no difference in the response to manipulations On the other hand, after hysterectomy, there was very little tendency for a compensatory change in the blood pressure to take place during closure (Table 5)

When the operation was performed for the cure of inflammatory disease, the relations were more marked than in the cases of tumor The varying effects of operation for myoma, for inflammatory disease and for early cancer are shown in Chart 5 In one case, cholecystostomy was done after the uterus had been removed There had been a fall in pressure during the ligation of the vessels and covering in of the raw area of peritoneum, from which the patient had rallied The uterus was removed in thirty-five minutes, the ligations and the peritoneal suture required twenty minutes When the second incision to expose the gallbladder was made, at sixty minutes, the pressure fell and continued to fall during the fifty minutes required to complete the operation The effect of the additional trauma of the upper quadrant manipulation shows the cumulative increase in sensitiveness of the vasomotor system during a severe operation (Chart 5)

During operation for salpingitis and for the removal of ovarian cysts, the blood pressure followed closely the series of changes noted during hysterectomy Acute inflammatory disease increased the sensitiveness of the patient to all manipulations

When vaginal and abdominal operations were combined, as, for example, repair of a lacerated perineum with uterine suspension, there was a frequent fall in

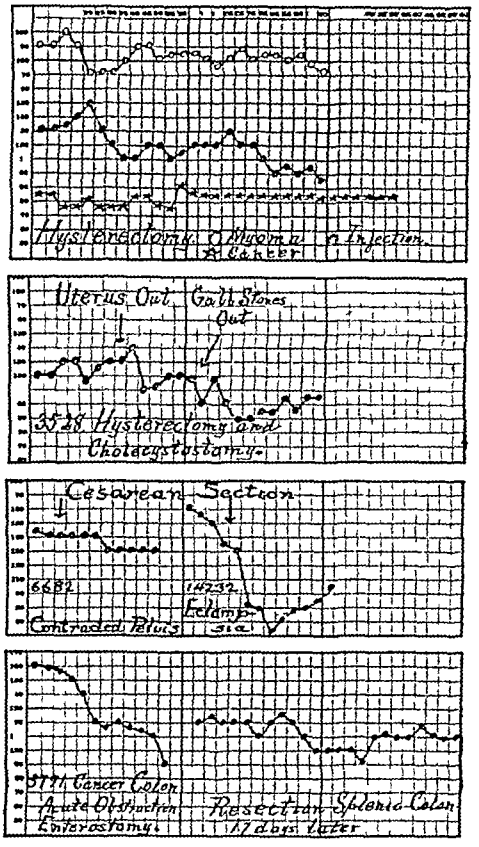

Chart 5—Blood pressure changes in hysterectomy in hysterectomy with cholecystostomy in cesarean section and in cancer of the colon

pressure after the patient was changed from the lithotomy to the Trendelenburg position

Cesarean section performed because of contracted pelvis was done without any great change in the pressure, but when the operation was required because of eclampsia, the fall in pressure as the uterus was emptied was a great one (Chart 5)

RESECTION OF THE COLON

When this operation is performed for the removal of carcinoma of the colon, the value of the two stage procedure is generally admitted Under any circumstances the excision of so important an organ with the necessary manipulation of vessels and nerves is associated with considerable change in the blood pressure When the patient comes to the surgeon already debilitated by a malignant tumor, added to in many cases by

intestinal obstruction of varying degrees of completeness, the reaction to operation, as shown by the blood pressure, is greatly intensified

Many of the cancers of the colon belong to a group of tumors in which the local growth is extensive, but in which metastasis occurs late These secondary growths are arrested for a considerable time in the adjacent lymphatic glands For this reason a wide local excision, if it can be done successfully, offers an unusually good chance for cure of the patient In this group of cases an acute intestinal obstruction is often the first symptom At the operation required by the obstruction the tumor can be explored, but its removal should never be attempted Enterostomy well above the seat of obstruction and on the opposite side of the abdomen should be done as a preliminary step Almost always the blood pressure falls as the tension is relieved by the enterostomy (Chart 5) The fall persists for several hours and is a warning against prolongation of the operation

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ABSTRACT OF DISCUSSION

DR BERTRAM M BERNHEIM, Baltimore This paper illustrates once more the extreme advisability of surgeons taking advantage of clinical aids of known worth Physicians, generally, have long emphasized the value of blood pressure readings, but surgeons have neglected their opportunities They pay too much attention to new operations It must be apparent to even the most skeptical that blood pressure readings, properly made, during the course of an operation offer a factor of safety second to none and only too often sorely needed Dr McGlannan has only scratched the surface However, his charts illustrate the practical observations of the anesthetist during the course of operation Would it not, perhaps, be possible by means of blood pressure studies to determine the psychologic time for operation in certain states, such as, for example exophthalmic goiter, much in the way that basal metabolism studies are supposed to do now? Would it not be possible, by intensive blood pressure studies, to differentiate between certain states of shock, such as, for example, an intra-abdominal hemorrhage and a peritonitis of unknown origin? I have devoted myself to studies of this character for many years and have always used the blood pressure apparatus I realize now that I have not reaped the benefit from this diagnostic means that I should have, merely because there was little or no correlation between blood pressure findings in hemorrhage and blood pressure findings in surgical conditions in general

Roentgen-Ray Treatment of Detachment of Retina and Trauma of the Eye—E Vigano, chief of the radiotherapy department of the public hospital at Milan, published in the *Journal de radiologie* May, 1920, p 213, an account of his favorable experiences in fifty-nine cases of this kind He never noted any untoward objective local reaction, and the patients all said they had been relieved by the applications of the roentgen rays They favor the resolution of cicatricial adhesions and resorption of hemorrhagic effusions and inflammatory exudates and infiltration, and they act on detachment of the retina In a case of the latter in a man of 69, the retina was almost totally detached and the radiotherapy was begun the eleventh day By the sixth application vision was much improved, allowing reading, and this improvement has persisted over a year to date This treatment was supplemented by a periodic course of iodin Vigano found that the roentgen rays were always borne without harm by the tissues of the eyeball and of the orbit when applied in proper doses, outside of periods of acute inflammation and in the absence of foreign bodies in the eye He adds that this treatment was not applied until after the failure of the usual measures

TROPICAL BRONCHOPULMONARY MYCOSIS

RALPH W MENDELSON, M D
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Under the heading bronchopulmonary mycosis may be grouped a host of respiratory affections due to a great variety of fungi and found with great frequency

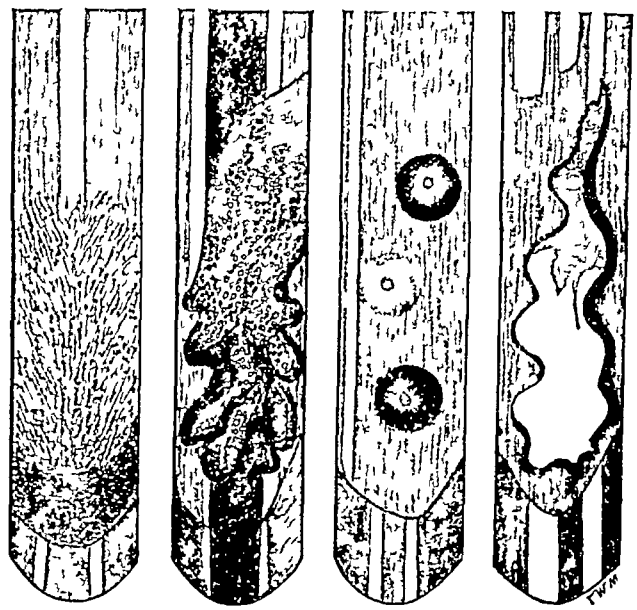

Fig 1.—Tropical fungi recovered from lung and sputum and grown on glucose agar

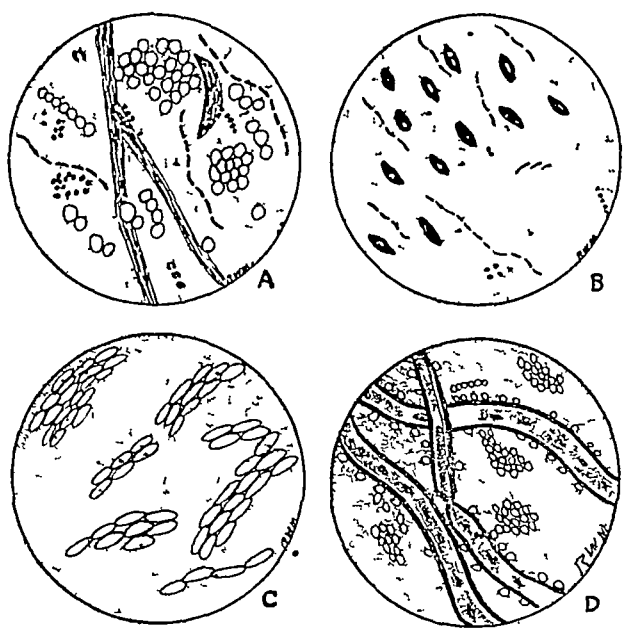

Fig 2.—*A B* sputums in cases of bronchopulmonary mycosis *C* pure culture 3 days old grown on glucose agar (conidia only) *D* glucose agar culture 10 days old (mycelia and conidia)

in the tropics, especially in those parts where the humidity, as well as the temperature, is high Pioneer work in this line has been done by Castellani, and his detailed classification according to the many different sugar reactions stands as a monument to years of

research and scientific observation The following group arrangement is the latest, but no doubt will be modified as the question of mycotic respiratory diseases is further studied and reported on

GROUP 1—Monilia persoon, 1797 Oidium Link, 1809 Saccharomyces Meyen, 1833 Willia Hansen, 1904 Crytococcus Gilchrist and Stoker, 1896 Coccidioides Rixford and Gilchrist, 1898

GROUP 2—Hemispora Vuillemin, 1906

GROUP 3—Nocardia Toni and Trevison, 1899 Cohnistreptothrix Pinoy 1911

GROUP 4—Aspergillus, 1729 Sterigmatocystis Cramer, 1869 Penicillium Link, 1908 Mucor Micheli, 1729 Rhizormucor Lucet and Costantin, 1900 Lichthiemia Vuillemin, 1904

GROUP 5—Sporotrichum Link, 1809

In the city of Bangkok, where the weekly deaths reported as due to tuberculosis average from 15 to 33 per cent of the total deaths reported, it is interesting to note that of a series of cases numbering one hundred in all, presenting themselves at one of the local hospitals for treatment for tuberculosis of the lungs, 5 per cent proved to be mycotic, 23 per cent spirochete infections, and the remainder classified as tuberculosis, although in only 10 per cent could the tubercle bacillus be demonstrated

The pathology of the disease has not to my knowledge been fully reported on, and the data given here,

FIG. 3—Pulmonary moniliasis small 'tubercles in upper lobe from which pure culture monilia were obtained no tubercle bacilli were found

although by no means complete, are the result of personal observation in the postmortem room The cases observed have come to necropsy as the result of some intercurrent medical or other accident Cultures of many lungs have been taken in order to obtain a pathologic picture the result of a pure mycotic infection From the illustrations it will be seen that on cut sections the lungs resemble very much a tubercle infection The lung from which a pure culture was obtained could with difficulty be cut, the small "tubercles," which in reality are mycotic tumors, stand out as very prominent white masses Although the blood supply is completely cut

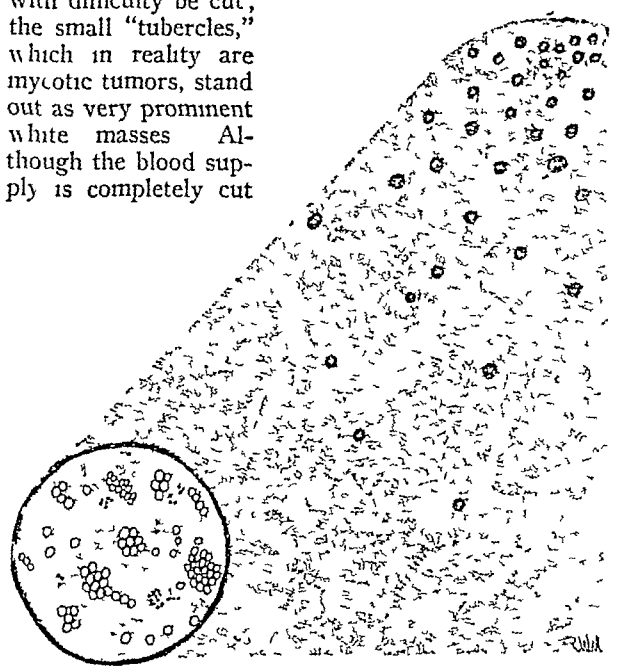

FIG. 4—Monilia tumor masses in upper lobe from which a monilia in symbiosis with a staphylococcus was obtained

off from these filbert-like growths, yet there seems to be no necrosis, and it is possible that the surrounding tissues indirectly supply nourishment The small growths can be teased apart and seem to be made up of old connective tissue As many different specimens have been examined without finding any lungs in which necrosis has taken place, it would seem that the fungi at least those found in Siam, have in the beginning a stimulating effect on the tissue cells Whether or not there is later on a degeneration with the production of local abscess with its other manifestations I am unable to say, but in view of the fact that mixed infections of old standing present on postmortem examination the same firm connective tissue tumors, it is doubtful whether these growths, except under the most adverse conditions break down

A specific determination of the different fungi recovered cannot be arrived at unless the various sugars are at hand to carry out the necessary reactions, our laboratory at present is not so extensively stocked, and for this purpose cultures are being sent to London From a clinical point of view it would seem to make not a great deal of difference, if any at all, as to the species of the symptom producing monilia, and, for practical purposes, cases may be divided into acute and chronic

The acute cases as well as the chronic may be mild or severe, but the average case presents signs and symptoms not at all unlike those of an acute bronchitis There is some fever, irritating cough, expectoration of large amounts of mucous or mucopurulent sputum and a general sensation of illness The chronic cases, on the other hand, are to be differentiated from tuberculosis and spirochetosis The symptomatology of an average chronic mycotic lung infection produces all of the signs and symptoms of a tubercle infection even to true hemoptysis, which would tend to show that these mycotic tumors do, under favorable conditions, break

down and degenerate But in these cases the infection is as a rule mixed and not uncommonly associated with a true tuberculosis, so that it is impossible to come to a definite conclusion on this point

A diagnosis can be made only after laboratory examinations, and, as stated above, the chronic cases must be differentiated from tuberculosis This should be done by animal inoculation if sputum examination is negative From bronchopulmonary spirochetosis, direct sputum examination will decide at once

The prognosis and treatment of the chronic cases is not unlike that in tuberculosis There is no specific, although potassium iodid is advised It is possible that the good results reported are due to the "dissolving" effect of the iodid on the mycotic tumors, hastening their disorganization and final absorption

Fig 5—Monilia tumor masses in case of bronchopulmonary mycosis culture shows mixed infection

From a public health point of view the only difference between tuberculosis of the lungs and bronchopulmonary mycosis is one of degree They are both contracted in the same way Milk-borne tuberculosis is practically unknown here, as very little milk is used and that not raw They are both incapacitating, and are both preventable

It is not improbable that many cases of supposed tuberculosis of the lungs, especially in some of the Southern states of the United States, would on careful bacterial examination prove to be cases of bronchopulmonary mycosis

Tuberculosis Schemes—I do not mean to infer that elaborate and costly schemes for the treatment of tuberculosis are not necessary, but I certainly do wish to imply that they will not meet with a full measure of success unless they are put into really competent hands The present tendency appears to be to spend money lavishly on tuberculosis schemes, but to do little to ensure that their conduct is entrusted to highly skilled workers—H Gauvain, *Brit J Tuberc* **15** 3, 1921

WASKIA INTESTINALIS ITS CULTIVATION AND CYST FORMATION*

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The small flagellate *Waskia intestinalis* was first described by Wenyon and O'Connor[1] in 1917 They found it in the stools of two patients in an army hospital in Alexandria, Egypt They believed that the second patient became infected from the first patient, as the beds of the two patients were close together in the same ward Both patients were admitted as carriers of *Endameba histolytica* *Waskia* appeared in the first case a week after admission to the hospital, and withstood the injection of 12 grains of emetin As the *Waskia* infection was disappearing, the patient developed a chilomastix infection The second patient was being treated for *Endameba histolytica*, which was fast disappearing, when *Waskia* suddenly appeared in the stools three weeks after the patient had been admitted to the hospital Both patients showed tendencies toward constipation and were treated with repeated doses of salts Wenyon and O'Connor conclude that there is no evidence that the flagellate is pathogenic

Kofoid, Kornhauser, and Plate[2] in 1919 reported *Waskia intestinalis* as occurring in seven patients in Debarkation Hospital No 3 in New York City Here it appeared in liquid diarrheic stools of patients under treatment Three of the infections were from overseas men, and four from men in home service Five of these cases were from the Southern states and two from New England All were accompanied by multiple infections of from three to six other parasitic species

Castellani and Chalmers[3] classify *Waskia intestinalis* under the order Cercomonadidae, family Tetramitidae, subfamily Embadomonadinae, genus Embadomonas

Since these papers, *Waskia* has not been further reported Public health officers have been much concerned with the possible spread of diseases brought over by returned soldiers The following case of *Waskia intestinalis* infestation indicates that new protozoan diseases may be spreading here among the civilian population

April 7, Dr Milton Linthicum sent to this laboratory the stool of a patient who had a history of many years of diarrhea She was known to have a trichomonas infection She had never been out of the United States and had spent most of her time in Pennsylvania and Maryland

From this specimen I inoculated several tubes of different kinds of mediums by means of a sterile platinum loop The tubes were incubated at 35 C In a few days, *Waskia intestinalis* and its cysts appeared in large numbers In one tube I had a pure culture of *Waskia*, i e, no other protozoa were growing with it, though there were numerous bacteria present from the intestine This culture has been kept under continuous observation for over eight weeks Transplants into new culture tubes are made every other day The

* From the Department of Medical Zoology, School of Hygiene and Public Health Johns Hopkins University

1 Wenyon, C M and O'Connor F W Human Intestinal Protozoa in the Near East London Wellcome Bureau of Scientific Research 1917

2 Kofoid C A Kornhauser S I and Plate, J T Intestinal Parasites in Overseas and Home Service Troops of the U S Army J A M A 72 1721 1724 (June 14) 1919

3 Castellani and Chalmers, Manual of Tropical Medicine, 1919

flagellates are still (June 6) in a normal, active condition

This species seems to correspond with *Waskia intestinalis* as described by Wenyon and O'Connor It is a small, active flagellate (Fig 1), measuring in stained preparations from 5 6 to 7 2 microns in length and from 4 to 4 8 microns in width There is a rather large cytostome and two anterior flagella The one coming from the anterior end of the animal is long and slender, and is used for locomotion The second flagellum comes from the cytostome and is shorter and much thicker It seems to be used in

Fig 1 — Waskia intestinalis showing anterior nucleus and two anterior flagella one much thicker than the other and coming out through the cystostome Camera lucida drawing 1 9 mm objective, 12 5 ocular

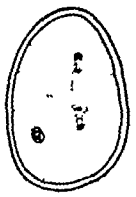

Fig 2 —A cyst of Waskia intestinalis Camera lucida drawing 1 9 mm objective, 12 5 ocular

getting food The cytoplasm is mostly much vacuolated and contains many bacteria in food vacuoles

In stained preparations the nucleus is seen in the extreme anterior region It has a distinct membrane, with usually a small central karyosome There are two blepharoplasts from which arise two flagella

The cysts are pear shaped (Fig 2), measuring from 4 8 to 7 2 microns in length and from 4 to 4 8 microns in width They appear as small, light yellow, refractive bodies in the culture medium Wenyon and O'Connor assumed that these cysts belong to *Waskia* because they found them only in the feces where *Waskia* was present The appearance of these cysts in cultures where *Waskia* is the only organism growing, except the bacteria, is proof of their identity As additional proof, some days there would be large numbers of *Waskia* in the cultures and on the following day the number would be greatly reduced and the number of cysts greatly increased This seems to be the first time that cysts have been obtained from intestinal flagellates in culture, and proves beyond doubt that these cysts do belong to the flagellate *Waskia intestinalis*

CULTURE MEDIUMS

Waskia intestinalis has been cultivated on three different liquid mediums ovomucoid, Locke-egg, and an ox bile salt medium, and also on Boeck's medium of Locke with a few drops of sheep or human serum

Ovomucoid medium is thus made The white of one hen's egg is thoroughly shaken up with glass beads To this 100 c c of 0 7 per cent sodium chlorid solution is added This is cooked for half an hour over a hot water bath, all the time the medium in the flask must be kept in constant motion by shaking It is then filtered through cotton with a suction pump and about 6 c c of the filtrate put into small test tubes To these sometimes are added a loop full of the yolk of the egg The tubes are then autoclaved for twenty minutes under 15 pounds of pressure

Locke-egg medium is made with one hen's egg thoroughly shaken up with glass beads To this 200 c c of Locke solution is added The Locke is made of sodium chlorid, 0 9 gm , calcium chlorid, 0 024 gm , potassium chlorid, 0 042 gm , sodium bicarbonate, 0 02 gm , and sometimes 0 25 gm of dextrose was added This later did not seem to affect the growth of the organisms The Locke and egg are cooked for fifteen minutes over a hot water bath and then filtered, tubed and autoclaved as the ovomucoid medium

The ox bile salt medium contained 1 gm of ox bile salts, 0 4 gm of peptone, and 100 c c of 0 7 per cent sodium chlorid solution This was warmed to facilitate the solution of the salts and peptone It was then tubed and autoclaved as the other mediums Before using this medium, three or four drops of sheep or human serum[4] were usually added On this medium *Waskia* divided most rapidly, but it did not live as long as on the other two mediums On this ox bile salt medium there would be large numbers of flagellates on the second day, and these would usually disappear on the third day A few cysts would be found, but there were not as many of these as there were organisms on the previous day, showing that many of the animals had disintegrated instead of encysting

On the Locke-egg ovomucoid, *Waskia* lived much longer One culture lived for seventeen days on ovomucoid On the Locke-egg medium they lived from three to ten days To both these mediums I sometimes added three or four drops of sheep serum or human serum This often seemed to increase the rate of division and also to shorten the life of the culture, owing no doubt to the increased accumulation of waste products In both the ovomucoid and in the Locke egg cysts were found These would begin appearing about the fourth day after inoculation Only a few cysts were found in the ox bile medium, as already stated The Locke-egg is especially to be recommended, as the protozoa multiply rapidly and seem normal on it without the addition of serum, which is often difficult to obtain

NERVOUS SYMPTOMS IN EX-SOLDIERS

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Of the disabled soldiers who have been the storm center in Washington in regard to general policies as to their treatment and management, a very important group consists of the ex-service men suffering from nervous symptoms, which, occurring alone, constitute a psychoneurosis However, these nervous symptoms are not strictly confined to psychoneurotic cases Nervous symptoms occur frequently in men otherwise disabled They are occasionally found, as superimposed symptoms, in those cases which were grouped in the army under the neuropsychiatric service, namely, the epilepsies, the feeblemindedness, frank or incipient insanity, the organic nervous disorders, psychopathic states and certain other types Nervous symptoms also occur in medical cases, and at times it is difficult to determine the true nature of the conditions found A medical officer of the Public Health Service recently stated that, of the patients sent to the hospital for observation for tuberculosis, many

4 Mrs Hogan of the Public Health Laboratories kindly gave me the serum from the Wassermann tests

were not tuberculous but were suffering from various neurasthenic symptoms

In nervous symptoms in ex-soldiers, therefore, either when these symptoms are expressed as a frank psychoneurosis, or when they are coexistent with some other disability, we have a problem of considerable importance Such cases are coming under observation in hospitals, in clinics, and as private patients, all over the country They are being cared for by physicians in the government service, and also by physicians in private practice It is difficult to estimate their exact number, but for various reasons they constitute one of the most important problems concerning ex-service men with which the government has to deal

While the general responsibility for the care of these ex-soldiers rests with various government agencies, the greatest responsibility for their treatment rests with the medical profession Is it possible for physicians to formulate a general policy regarding them which will be useful not only for their actual treatment, but also for their general welfare in the community? Will the facts which we have learned about them during the war be of value to us now in the general policy regarding their management? They are applying to physicians not only for treatment, but also in respect to vocational training and compensation

Much that we learned about these patients during the war was not entirely new, but many of the theories which we had entertained before, as to causes and treatment, had ample opportunity for trial As a result we came out of the war with a definite policy regarding psychoneurotic cases

The treatment of these patients was under a separate section of the Medical Department of the Army—the Neuropsychiatric Section The policies which were established by this section deserve serious attention The officers in charge of it had the advantage of being able to profit by the experiences of the mistakes of our allies before we entered the war

If the lessons learned in the war about these cases are to help us in civil life, what are the main points to be kept in mind? Doubtless many of the readers of THE JOURNAL are already familiar with these facts, but they may be briefly reviewed

LESSONS LEARNED IN THE WAR

In the early part of the war, the Allies had to deal with many nervous men These patients complained of neurasthenic symptoms, hysterical conditions, such as palsies, tremors, functional hemiplegias, functional deafness, blindness and stammering They suffered from anxiety states, fears, amnesias, in short all those conditions which constitute psychoneurotic types The hysterical cases were especially frequent

It was thought at first that all these men must be returned at once to the rear, they must get away from the scene of battle and be given rest, to be rehabilitated This was something which took many weeks The results of the treatment were often uncertain, and there were many relapses and failures The civil life agencies that tried to help from sympathetic motives were not more successful In fact, their efforts, in some instances, seemed actually harmful

It was fully demonstrated that this general policy was good neither for the army nor for the soldier, so far as his recovery went It was learned by the Allies, before we entered the war, that the worst thing that could be done for a man beginning to break nervously was to evacuate him to the rear to a base hospital By these measures his symptoms became fixed Suggestion played an extremely important role

It was found that if these men were given early treatment with their organization, a short rest, reassurance that their nervous state was not serious, and possibly treatment which utilized suggestion as a remedy, they stayed with their organizations, and their nervous symptoms subsided So, the problem of the nervous soldier which at one time was a serious one, not only from the standpoint of morale and hospital beds but also from the standpoint of actual fighting men, was satisfactorily met

Full advantage of this fact was taken by the medical department of the American army It is true that before the system could be fully put into effect, many psychoneurotics did get back to base hospitals, and the same thing happened to them as had happened with the Allies—their condition became chronic This was during the Chateau Thierry drive From that time on, special medical officers treated these cases at once in field hospitals and in small adjunct hospitals near the front The results were excellent The nervous men were kept with their organization, and as a general rule, instead of developing chronic symptoms, they recovered

It was found necessary to have medical officers especially assigned to look after these cases, and to have those who either had had experience in civil life in this specialty, or who had been given instructions since entering the service Because of their special training they recognized these cases promptly, and exhaustive examinations were not necessary Discussions as to interpretation of symptoms were avoided This was distinctly to the patients' advantage, because discussions and delay suggested to them that their malady was serious

Of course, there were a certain number of failures Certain cases had to be hospitalized, but the general policy was in the right direction, and solved a difficult problem

APPLICATION TO PRESENT CONDITION

Cannot we utilize this knowledge in the present civil life situation in respect to the psychoneurotics? The conditions are not the same, but there are many parallel features

These ex-soldiers, now in civil life, are in somewhat the same condition as they were in the army In the army they had to start life afresh, and now that they are out in civil life, many have to take up a new occupation, and they have to start from the beginning a second time The same type of men —in many instances the same men—that developed nervousness in the army are developing nervous symptoms now, during this readjustment time, in civil life These symptoms are not necessarily more serious than they were in the army The men need assistance and intelligent medical advice Can the general principles which were successful in the army be put into effect now?

One thing seems to be clear These nervous men should not be separated from their homes and sent to hospitals for observation unless the indications for it are definite They do not generally require observation in hospitals If sent to hospitals the same thing is likely to happen as happened to the men who were

sent from their organizations to base hospitals during the war

In the army, to meet this need, as has been said, advance stations were instituted in the field hospitals What is there comparable to this in civil life? Outpatient clinics are an agency to be considered Can special clinics be established for these men, where they can receive treatment, where they need not leave their work unless their symptoms necessitate it, and where they need not disorganize their home to go to a hospital?

To establish such clinics is perhaps a difficult undertaking in some communities Of course, some already exist in connection with government agencies doing this work Such clinics have long existed in many cities, such as the Neurological Institute and Vanderbilt Clinic in New York, the Johns Hopkins Hospital Neurological Clinic in Baltimore and the Psychopathic Hospital in Boston But in the remote country districts and in other communities these clinics are not available Perhaps arrangements could be made by which the patient, even by traveling some distance, could visit a clinic twice a week This would not be entirely satisfactory, but it would be better than hospitalization

If it is advisable to establish such clinics, they should be under the control of the government agencies caring for ex-service men Probably in many communities the services of physicians on a part time basis could be obtained Such physicians should have special knowledge of the problems of these cases, and would have to have ample time for each patient Needless to say, a uniform policy as to treatment records and recommendations should be decided on by a central bureau

By some such arrangements as this it seems reasonable to believe that a very considerable number of these men with beginning nervous symptoms, perplexed as to what to do, could receive early diagnosis, treatment and advice Many of them could probably remain at their work, at least working part of the time They do not require prolonged rehabilitation or training, and the development of protracted symptoms might often be avoided Of course, such clinics should have accessories, such as hydrotherapy, as are beneficial for these cases

The question of vocational training of psychoneurotics is another factor What advice should physicians give in regard to vocational training for ex-service men with neurotic symptoms? These cases, of course, must be decided individually, but some general facts may be kept in mind We know that vocational training in most cases means certain changes in a man's living arrangements It means regular and systematic study, and application to some task, something which should be continued for a number of weeks or months, if benefit is to result Now, this continuous application is where psychoneurotics with acute symptoms have difficulty They fail in sustained effort, and are fatigable This is one reason why they experienced difficulty in the army The same difficulties, therefore, are encountered again in organized training It should also be remembered that they are primarily patients, they are not in the same class with the man who lost an arm or a leg, and who needs some special education before he can go back to his work It is not intended to suggest that vocational training is not advisable for psychoneurotic cases In many instances, such training may be the solution of the problem and may be the means of the man's getting on in life in a way which he has not been able to do before But every case should be considered individually With some cases it may be possible to work out a program of part-time training, and for cases that need it, a special training center where a modified schedule can be put into effect might be of great advantage

The question of compensation is still another consideration What should be the policy about compensation for psychoneurotic patients? The disability is a temporary one Those who have studied this subject in England and Canada feel that permanent compensation, implying a permanent disability, should not be given The method of reexamination and readjustment of compensation according to the condition of the patient has been suggested and put into practice

Again, disabled men going to a hospital are entitled to full compensation If by such a ruling psychoneurotic patients are encouraged to go to a hospital for treatment, the undesirable effects are evident

With some patients the question of compensation seems to complicate treatment If this could be settled in one way or another and dismissed from the patient's mind, treatment could then be undertaken without complicating factors In such cases permanent compensation—a minimum which need not be further reduced—might be of advantage, in order to have the question settled

These are questions which arise in determining compensation They are mentioned here to illustrate an additional factor which the medical man must take into consideration in the management of these patients

What clinical types of neuropsychiatric cases are being encountered by physicians throughout the country? Not all the cases are psychoneurotic although these probably constitute the majority

A recent survey that I undertook on the request of the Hospitalization Committee appointed by the Secretary of the Treasury, possibly offers a fair basis for estimate This survey took place in the U S Public Health Hospital, Perryville, Md, a hospital primarily for psychoneurotic cases, but one where other neuropsychiatric types are found, since patients are sent there for observation and diagnosis as well as for treatment

Of fifty-one patients examined in detail at Perryville, six were found to be epileptics of different types, thirty were suffering from psychoneuroses, eight from mild psychoses, two from organic disease of the nervous system, two were medical cases, two were defective mentally, and there was but one who could be designated as a constitutional psychopath

TYPICAL CASES

These cases were interesting from a number of standpoints

EPILEPSIES

CASE 1.—A young man was apparently suffering from typical epileptic seizures He gave an account of how this developed in the service He has also had a gunshot wound, and as a result one leg had been amputated His attacks were such that he required hospital treatment

CASE 2.—A fine appearing young man of 22, was sent to the hospital for diagnosis He had no idea, apparently, of what his condition was, but he described symptoms characteristic of epilepsy and had been seen to have frank seizures in the hospital He said that he had been perfectly well before entering the service

CASE 3—A somewhat older man described attacks closely resembling epilepsy, which he said came on after the vessel he was on had been torpedoed, and he was exposed in the water for several hours He apparently had seizures suggestive of epilepsy, but the longer one talked to him about his symptoms, the less clear this became He had suffered from stuttering and loss of speech for a long period. This came and went. Besides these seizures he was extremely nervous, his hands and legs shook, and he felt very badly treated because his compensation was not as great as he thought it should be In other words, this case is complicated If the man has epilepsy at all, which is open to question, he certainly in addition has many neurotic symptoms Many such cases were seen during the war

PSYCHONEUROSES

CASE 4—A man, aged about 30, was sent to the hospital for diagnosis because he was nervous, could not sleep and was irritable He got along very well in the hospital for a time, but after he went to Washington in regard to his compensation he became much upset began to stutter and stammer (as he had once previously many months ago) and showed an aggravation of symptoms He felt that he was not being treated with proper consideration. In other words, he showed a marked emotional change, and in addition hysterical symptoms He did not require hospital treatment, and if the matter of his compensation could have been settled one way or another, his symptoms probably would have subsided

CASE 5—A fine appearing man, aged 23 said that he was nervous, had bad dreams, was physically exhausted and could not keep on with his work He was quite distressed about himself He had had these symptoms overseas and had improved greatly, but his symptoms had returned He was genuinely perplexed He was willing to be advised in every respect, and probably in his case hospital treatment for a short time was of advantage, especially in reestablishing his reassurance

CASE 6—An Italian complained of trembling and weakness of his right arm and leg, and numbness up to the elbow and the knee Physical examination detected no evidence of organic nervous disease This condition had come on after he had done some lifting at the camp He had not been overseas He was better when discharged from the service, but had felt his symptoms returning and applied for treatment His was obviously an hysterical state for which he required treatment, but not hospitalization

CASE 7—A man who worked as a clerk in civil life—a man nearly 40—had very acute symptoms of stuttering and stammering, especially when interviewed He also trembled violently He came to the hospital for diagnosis His symptoms were worse when he interviewed physicians, a fact which he recognized himself He did not require hospital treatment, and with proper reassurance he probably could start some work which did not require too great responsibility at first

CASE 8—A Pole had gone through the entire service very well and had not been nervous while in action A year after his discharge from the army he had grown sleepless worried, nervous and felt that he could not do his work. The cause of his trouble started after the death of his mother some months previously, and the death of his brother more recently He required treatment and reassurance but not in a hospital

CASE 9—A man had gone through the service very well and evidently had done good work He had had no nervous symptoms while in the army Recently he developed a compulsion neurosis in which he pressed his neck, resulting in unconsciousness occasionally He required hospital treatment.

PSYCHOSES

CASE 10—One young man was mildly depressed He said he became confused and could not do his work He blamed himself for numerous mistakes in his past life He said he certainly was not worthy of treatment at the hands of the government, nor should he receive any compensation. He did not wish to come to the hospital, although he was quite amenable to advice. He was a mild manic-depressive case with depression and required hospital treatment.

CASE 11—A man about 40 years of age, of mild manner and pleasing appearance, was quite concerned because the government officials had not taken into consideration the numerous inventions which he had placed in their hands He had a great deal of correspondence from government officials He was paranoid, and required hospital care

CASE 12—A boy who apparently had done very well in the service was full of plans as to what he was going to do in the future his trainings, trips to Washington, correspondence and the question of marriage Sometimes he was quite annoyed at his stay in the hospital, at other times pleased with it This boy showed the overactivity elation and the flight of ideas of mild hypomanic cases He required hospital care

ORGANIC DISEASE OF NERVOUS SYSTEM

CASE 13—One man complained of fatigability and exhaustion, and said that he was "weak from the waist down" He had remained in bed for some time before coming to the hospital He had improved before admission and seemed quite well again His physical signs were those of multiple sclerosis

CASE 14—A man complained of sleeplessness headaches and drowsiness during the day, although he could not sleep at night He gave a history of influenza many months previously and later eye palsies and slight fever He probably had lethargic encephalitis

SIGNIFICANCE OF NERVOUS SYMPTOMS IN EX-SOLDIERS

It is interesting that, of the foregoing patients, practically all felt that they had been entirely well before entering the service These men had been at the hospital for varying periods, some of them for several weeks, some for several months, and some had been but recently admitted Some were receiving compensation, and with some compensation was pending

The preceding remarks are not advanced for the purpose of advocating any one form of management of these cases, to the exclusion of others They are made chiefly to call to the attention of the profession the importance and character of nervous symptoms in ex-soldiers It would probably be well to keep such facts in mind in the examination of all ex-service men, irrespective of symptoms complained of During the war a certain number of soldiers were admitted to general medical wards or special wards, complaining of symptoms suggesting cardiac disease, gastric disturbances, orthopedic disorders or nose and throat disease, when the true condition was found to be a psychoneurosis Every hospital facility for the man who needs hospital treatment should be furnished, but it should also be kept in mind, as demonstrated during the war, that hospitalization is not the proper treatment for all patients

This prevalence of nervous symptoms is not confined to this country The same condition prevails in Europe, and it is probable that if complete data were available, psychoneurotic conditions would be found to have been an accompaniment and an aftermath of all wars

The solution of these problems rests to a great extent with physicians Interest in these cases, however, is not confined to the profession Interest has been rightly manifested by the public, as shown through the public press for many months But just as during the war relief organizations required that advice and guidance which can be given only as the result of medical experience, likewise at this time medical advice is necessary A policy of treatment and management of these cases, decided on by the profession, will be shared alike by the medical and civilian relief agencies which have the responsibility for the care of ex-service men

118 East Eightieth Street.

SUTURING BLOOD VESSELS

WITH REPORT OF A SUTURED BRACHIAL ARTERY*

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In its early development, the suturing of blood vessels was a very spectacular branch of surgery It seemed to give hope of many things In the lower animals, kidneys were transplanted, or a leg of one dog would be attached to another dog, and the tissues would live Transfusion of blood was done by the suture method It was thought at one time that veins could be made to serve as conductors of the arterial current, and patients with impending gangrene of the extremities, due to arterial disease, anticipated complete relief by reversing the circulation Obviously, the operation was applicable to mending an injured artery

It was eventually found, however, that organs transplanted from one animal to another gradually ceased to function The fine biologic differences between the host and the donor caused an atrophy of the parenchyma of the transplanted kidney, even though the technical result of suturing the blood vessels was perfect Transfusion of blood is popularly done by mixing it with sodium citrate solution, or by collecting it in some receptacle and then quickly transfusing it The citrate method is often followed by reactions and possesses no advantage over the direct method except that it is an easier technic Transfusion by arterial suture is technically difficult, but direct transfusion can be readily done by a cannula, such as the Bernheim cannula, which exposes a much smaller portion of the artery and vein than would be necessary in suturing It has been proved quite definitely that the vascular circulation of the extremities cannot be reversed in any real sense [1]

In the excision of tumors that are attached to a large artery in the axilla or in the groin, ligation of the artery is usually safe, because the tumor often has slowly occluded the vessel and in so doing has developed collateral circulation There may be cases in which a tumor surrounds the artery without actually compressing it Here arterial suturing would be indicated As a result of the experience of the World War, many surgeons believe that in young men who have not lost much blood and whose blood pressure is normal, ligation of an injured artery will give satisfactory results

So the field for suturing blood vessels has greatly contracted There are, however, instances in which it is indicated as the preferable operation, or even as the only treatment that should be employed

Collateral circulation develops much less readily in adults after the age of 35 than in the young An arterial lesion that can be satisfactorily treated by simple ligation in a youth of 20, may result disastrously if ligation is performed in a patient of 40 There are certain locations in which injury to a large artery is particularly likely to be followed by gangrene Ligation of the popliteal artery, for instance, will more probably cause gangrene than tying the femoral higher up This, of course, is because of the arrangement of the collateral vessels The same condition appears to be true about the lower part of the brachial artery

In some way there has been an impression that arterial suturing can only be done by a few operators of peculiar skill and that it should not be employed by the average "practical" surgeon This is unfortunate because a technic that can only be used by the exceptional surgeon is not of much real value, and the art of suturing blood vessels may be acquired by any competent operator who is willing to spend some time in experimental work on the lower animals

A technic for suturing blood vessels in which broad surfaces of vascular endothelium are approximated and held by a double mattress suture applied under uniform tension has been described elsewhere [2] Since the description published in 1915, there has been no material change in this technic except the substitution of olive oil for petrolatum Cubbins and Abt [3] have pointed out that petrolatum, liquid petrolatum and lanolin are all irritating to the peritoneal endothelium, but that olive oil is apparently nonirritating Unfortunately, olive oil has poor lubricating qualities, and it is necessary to boil the arterial needle and thread in petrolatum and to apply a small amount of petrolatum on the buttons of the suture staff in order to make the thread run smoothly and hold to the suture staff The small amount of petrolatum on the thread is practically hidden from the lumen of the blood vessel by the method of applying a double mattress suture The vascular endothelium of the artery is anointed with olive oil, which is nonirritating and is readily absorbed Some experimental work on the use of olive oil in blood vessel suturing has been reported elsewhere [4]

In the case herewith reported arterial suturing seemed to be indicated

REPORT OF CASE

History—J F S, man, aged 37, sustained a complete division of the brachial artery and a partial division of the median nerve just in front of the right elbow when the edge of a metal sheet, which fell from the top of a truck, struck him squarely in front of the elbow Fortunately, his fellow-workmen applied prompt first aid treatment The patient was brought to St Elizabeth's Hospital April 6, 1920, about an hour after the accident and was immediately operated on

Examination—The tourniquet was very tight There was a transverse wound just in front of the elbow joint An incision was made at right angles to this wound and was carried above and below, thoroughly exposing the ends of the divided brachial artery About one third of the median nerve had been cut A serrefine was placed on the upper end of the brachial artery and the tourniquet was removed The ends had retracted until they were an inch apart The lower end bled very slightly The division of the brachial artery was about 1½ inches above the origin of the ulnar and the radial arteries The brachial vein was also severed It could not be determined definitely whether the recurrent branches of the ulnar and the radial were injured, but from the very slight amount of bleeding from the distal end of the divided brachial artery, it seemed that collateral circulation was exceedingly feeble This, with the fact that the patient was 37 years of age, indicated suturing the artery instead of ligation

Operation—The ends of the severed vein were tied The lower end of the brachial artery was dissected and clamped with a serrefine The injured portion of both ends was trimmed away with sharp scissors and the adventitia was

* Read before the Section on Surgery, General and Abdominal at the Seventy Second Annual Session of the American Medical Association Boston June 1921

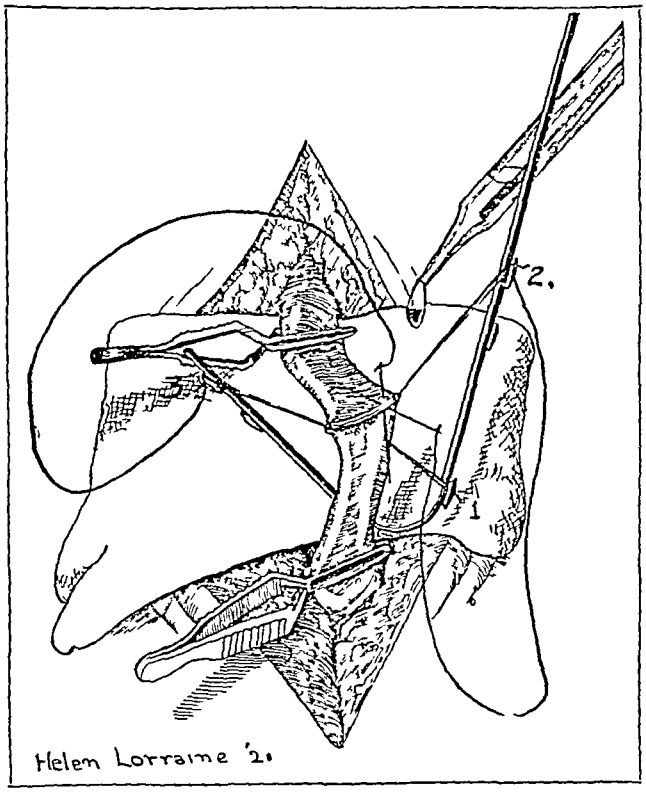
1 Horsley J S and Whitehead R H A Study of Reversal of the Circulation in the Lower Extremity J A M A 64 873 877 (March 13) 1915 Horsley, J S Ann Surg 63 277 (March) 1916

2 Horsley J S Surgery of Blood Vessels St Louis C V Mosby Company 1915 pp 46 77 Operative Surgery, St Louis, C V Mosby Company 1921 pp 69 90

3 Cubbins and Abt Surg Gynec & Obst 22 571 579 (May) 1916

4 Horsley J S Ann Surg 67 468 (April) 1918

pulled down and cut off Each end was washed out with a few drops of Locke's solution In order to approximate the ends without too much tension during the suturing, the elbow was flexed The divided artery was then united with the technic referred to, which consists of inserting three tractor sutures, fastening them around the buttons of an arterial suture staff, and uniting the artery with a double mattress stitch of 00000 silk in such a manner that broad endothelial surfaces are opposed and the margins of the arterial wound are averted (as in the accompanying illustration) When the blood current was turned on, only a few drops of blood leaked from the line of sutures The sutured artery was compressed with dry gauze and in a few minutes it was dry The median nerve, which was partly divided, was repaired with a single suture of arterial silk This brought the fibers together very accurately After turning on the blood current in the brachial artery, the pulse immediately appeared at the wrist A mattress suture of tanned catgut united the partially divided tendon of the biceps A small flap of severed muscle was sutured over the artery and the fascia was closed



Tractor sutures have been placed fastened to the buttons on the suture staff and the suturing of the first third of the artery has begun A double mattress suture is used Olive oil is dropped on the suture line

with a continuous suture of tanned catgut The patient left the table with a pulse of 90 of good volume

Results—The wound healed primarily and the patient made an uninterrupted recovery There was anesthesia over a portion of the index and middle fingers and over part of the palmar surface of the thumb, and there was some motor paralysis, all of which was due to the injury to the median nerve These symptoms gradually improved and the patient, when examined about a year after the operation (April 15, 1921), had almost completely recovered from the effect of the injury to the nerve Pressure made over the artery at the site of the arterial suturing completely obliterated the radial pulse, which returned again when the pressure was removed Pulsation at the site of the sutured artery was distinct

COMMENT

Ligation of the lower brachial artery in a patient, aged 37, with an injury of such a character that some of the anastomotic vessels were probably affected, would doubtless have been followed by either gangrene or ischemic pains on exertion, which would have impaired the function of the right forearm As he was a laborer, this would have greatly interfered with his livelihood Suturing the artery doubtless also promoted the recovery of the injured nerve, because the portion of the nerve distal to the injury had a normal blood supply when the brachial artery was sutured, whereas ligation would have very materially interfered with the nutrition of the forearm

617 West Grace Street

TREATMENT OF ARTERIOVENOUS ANEURYSM

REPORT OF TEN CASES *

JOHN F CONNORS, M D
NEW YORK

The great war has broadened and influenced surgical technic in many conditions which hitherto in civil life have not been sufficiently often encountered to arouse interest or individual initiative My object, therefore, in presenting this paper is to stimulate a greater interest in the treatment of arteriovenous aneurysm, and to show that this operation is not as difficult as the surgical textbooks would indicate While it is true that my observations cover only ten cases, nevertheless, the simplicity of this operation, while it is not new, urges me to present it for your consideration It is not my purpose in this presentation to take up the etiology, pathogenesis or symptomatology of arteriovenous aneurysm The reader is referred to the work of Dr Rudolph Matas,[1] to whom we are indebted to a great extent for his efforts in this branch of surgery, and to Keen's Surgery for a painstaking and exhaustive survey of the subject

The use of the machine guns with their sharp-pointed bullets and high explosives with their small shell fragments was responsible for the great number of vascular injuries during the war The frequency of these injuries might be gathered from the report of Bowlby,[2] in which he cites 277 wounds of blood vessels treated at a single British casualty clearing station in the early days of the Somme Salomon estimated that up to 1918, 1,400 traumatic aneurysms had been operated on in Germany He also reports that 81 per cent of the aneurysms seen by him at the Frankfort hospital were caused by through and through bullet wounds My observation was in keeping with this report, for eight of my ten cases gave a similar history Sir George Makin's reports tend to show that arteriovenous was the commonest type of aneurysm with which we had to deal He observed 272 cases of aneurysm, 152 of which were arteriovenous

The question of treatment by ligature or suture will have to be left open, for I am sure we have all seen cases in which no other method but ligature could have been practiced, particularly those cases in which the wound was caused by high explosives In these wounds the coats of the artery and veins are usually so badly damaged that no other treatment could be adopted The method of treatment by ligature has

* Read before the Section on Surgery General and Abdominal at the Seventy Second Annual Session of the American Medical Association Boston June 1921

1 Matas Rudolph Ann Surg **71** 403 (April) 1920
2 Bowlby A Brit M J **1** 705 (June 2) 1917

gained some advocates, owing to a better understanding of the collateral circulation, which is a most important factor and one that must be well considered and understood before attempting any operation on the vascular system The great fear we once had of peripheral gangrene following the ligation of a main artery has to some extent been dispelled by the work of men who have devoted a great deal of time to this investigation Their work would indicate that it is not so much the loss of the artery, as we have always believed, but that the underlying conditions play a large part in its formation In this instance I might refer to a case of ligation of the external iliac artery and vein following a gunshot wound [3] in which the patient made a complete recovery

This operation was first performed on a patient on whom I was making a repair of the median nerve I had had no thought of interfering with the aneurysm, but when the nerve repair was completed, the ease with which I was able to free the aneurysm *en masse* from the surrounding tissues led me to attempt its repair It was my intention to repair the artery and the vein, but it soon became obvious that I would not be successful, so I decided to repair the opening in the artery which was about half an inch in length and use the vein as an additional covering for the suture line, using it as two flaps This was accomplished with so little difficulty and the result obtained was so gratifying that I was encouraged, and it led me to try this operation in the other cases which came under my observation

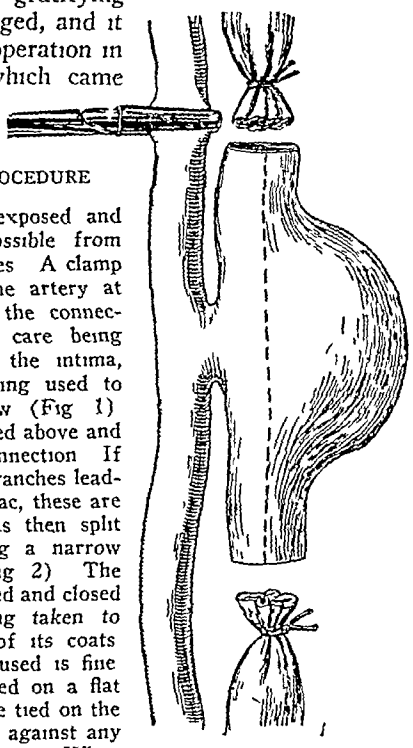


Fig 1—Clamp applied to artery and the vein ligated above and below the connection dotted line longitudinal division of vein

METHOD OF PROCEDURE

The aneurysm is exposed and freed as far as possible from the surrounding tissues A clamp is then placed on the artery at some distance from the connection with the vein, care being taken not to injure the intima, sufficient pressure being used to stop the arterial flow (Fig 1) The vein is then ligated above and below the point of connection If there are any small branches leading into the venous sac, these are tied off The vein is then split longitudinally, making a narrow and a wider flap (Fig 2) The opening is then exposed and closed by suture, care being taken to avoid the infolding of its coats The suture material used is fine paraffined silk threaded on a flat needle The knots are tied on the venous side, guarding against any narrowing of the lumen When the suturing is completed the clamp is gradually released and the amount of bleeding observed In the beginning, bleeding may appear alarming, but gentle pressure with a hot pad will control it, as a rule, though it may be necessary to add one or more sutures When the bleeding is controlled, the narrower flap (Fig 3*A*) is folded over the suture line Flap *B* is then folded over flap *A* No sutures are used to hold these flaps in position The field is then covered with fascia, thereby causing the suture line to be covered by flaps *A* and *B* and a layer of fascia

REPORT OF CASES

CASE 1—J D, aged 23, twelve weeks before admission received a through and through gunshot wound of the left arm at the junction of the middle and lower thirds He had a paralysis of the superficial flexors of the hand At the site of the injury a small pulsating mass could be felt With the stethoscope a decided bruit was heard He suffered no pain or discomfort, except the inability to use his hand and arm It was with the idea that he had an injury to the median nerve that the operation was undertaken At operation it was found that the median nerve had been injured but not completely severed It was surrounded by scar tissue which was evidently the track of the bullet The nerve was freed and sutured The aneurysm *was then exposed and freed from* the surrounding tissue with very little difficulty There was no dilation of the artery but the vein was dilated to about the size of a marble A clamp was then placed on the artery and the vein ligated above and below the communication and the operation completed as before described This patient made an uneventful recovery and was returned to the United States Some months after my return I received a letter from him saying that he had regained the function of his hand and arm

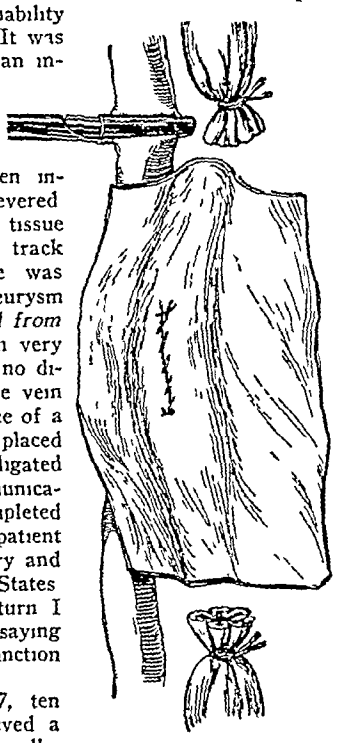


Fig 2—Vein opened exposing the arterial connection which has been sutured

CASE 2—J C, aged 27, ten weeks previously had received a gunshot wound *of the right axilla* On admission it was found that he had a mass protruding from the outer border of the pectoralis major muscle He said that this swelling interfered with the function of his arm At times, particularly at night, he experienced a loss of sensation in his hand There was a marked difference in the radial pulse on this side The volume of the radial pulse on the injured side was markedly decreased Operation revealed an arteriovenous aneurysm with slight dilatation of the artery at the site of the connection with the vein The vein itself was dilated to about the size of an English walnut, presenting a picture similar to an hour-glass It was very apparent that the vein could not withstand for any great length of time the pressure of the blood coming from the axillary artery I was a little fearful in this case of ligating the axillary vein, but it was obvious that this was all there was left for me to do The *same method of procedure was followed in this case* Following the operation the arm was kept abducted and slightly elevated, and continuous external heat was applied For three days the patient had a slight swelling of the entire arm, which was numb and which the patient described as always being "asleep" The day following the operation his radial pulse did not seem to have as much volume as before, and at times it was imperceptible On the fourth day gentle massage was begun, after which time he gradually improved At the end of six weeks he was returned to the United States at which time he had almost entirely recovered the use of his arm, and the radial pulse on the injured side although not so good as on the opposite side had greatly improved

CASE 3—H F three months previously had received a high explosive wound of the neck He presented a pulsating tumor at about the middle of the sternomastoid muscle His chief complaint was a buzzing in his left ear which interfered with his hearing on that side Operation revealed an aneurysm connecting the common carotid with the internal jugular vein

[3] LaRoque, G P Ann Surg 73 265 (March) 1921

During manipulation I felt what I thought was a foreign body on the inner side of the artery, about a half inch from the arteriovenous connection By gentle pressure from the opposite side of the artery I was able to extract a small fragment of shell, about an eighth of an inch in length and folded upon itself I was amazed to find that there was no bleeding when this extraction was completed, although up to this time no clamp had been placed on the artery The same method of procedure was followed in this case, but the operation was not completed with the same ease as in the two preceding cases, owing to the location This patient had a rather stormy convalescence, for three days he was just about on the border line, and complained a great deal of dizziness and headaches, but eventually he cleared up and was returned to the United States

CASE 4—M J, aged 28, had received a high explosive wound of the thigh Nine weeks after injury he had a severe secondary hemorrhage At operation it was found that he had an arteriovenous aneurysm of the femoral below the origin of the profunda A large clot almost completely filled the lower end of Scarpa's triangle On removal of this clot, active bleeding began from a hole in the vein The artery was clamped and the same method of procedure employed as in the preceding cases In spite of the fact that this operation was done in an unclean field, the patient made a good recovery

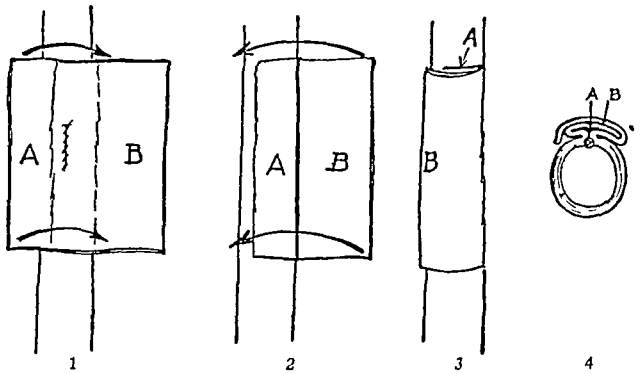


FIG 3—1 Suture completed 2 narrow flap *A* placed over the suture line 3 wider flap folded over narrower flap 4 cross section of operation completed

CASE 5—N B, aged 26, had received a gunshot wound of the left arm At the time of admission he had a paralysis of his left arm involving all the flexors He also had a pulsating mass between the internal condyle and the tuberosity There was very little, if any, difference in the radial pulses This mass caused him no pain or discomfort At operation it was found that the ulnar and median nerves were severed A distinct bruit could be heard with the stethoscope The severed nerves were sutured and the aneurysm treated as in the other cases When the patient returned to the United States there was no improvement in his arm

CASE 6—H D, aged 25, had received a gunshot wound of the left arm, involving the axillary artery and vein with no nerve injury He had a small swelling, about the size of a marble, which could be felt inside the inner border of the pectoralis major muscle, and with the stethoscope a bruit was heard This swelling gave the patient no discomfort or pain On palpation I experienced a purring thrill I requested this patient to have the operation because of my experience with the other axillary case He made a good recovery and was returned to the United States

CASE 7—M M, aged 33, had received a gunshot wound of the thigh close to the apex of Scarpa's triangle He presented a small swelling which gave him no discomfort, and at my request submitted to the operation He made an uneventful recovery

CASE 8—H M, aged 30, had received a gunshot wound of the arm involving the brachial artery and vein There was no nerve affection in this case The patient made an uneventful recovery

CASE 9—W M, aged 28, had received a gunshot wound of the arm involving the brachial artery and vein, presenting a small pulsating mass at the junction of the lower and middle third on the inner side of the humerus He had no loss of function, but at my request submitted to the operation and made an uneventful recovery

CASE 10—J M, aged 21, had received a through and through gunshot wound of the left knee This was the only fatal case in the series A large pulsating mass almost filled the popliteal space The patient had a great deal of pain, was unable to extend his leg and had a marked interference with the circulation below the knee No pulsations could be felt in the dorsalis pedis On palpation this mass, though hard, was compressible, and the blood passing through it could be readily felt At operation this swelling was found to be a large dissecting venous sac, with many small tributary veins After a great deal of difficulty the mass was freed from the surrounding tissue, the operation completed as in the other cases, and the wound closed without drainage The patient did very well for three days, having no discomfort, but there was no improvement in the condition of the leg The leg was flexed to an angle of about 45 degrees, and external heat was applied On the fourth day he had a hemorrhage, and on the following day I opened the wound and found a general oozing but no definite point of bleeding The wound was gently packed, and on the following day he had another hemorrhage Examination revealed that the wound had become infected, the pus showing a streptococcus Transfusion was performed four time each transfusion being followed by a short period of improvement, but the patient died on the tenth day after operation

At necropsy, I dissected out the popliteal artery in its entirety At the site of repair there were no signs of healing

I attribute the failure in this case to the infection, favored by the manipulation necessary to free the sac, and the lowered resistance of the patient

616 Madison Avenue

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS HORSLEY AND CONNORS

DR. RUDOLPH MATAS, New Orleans Dr Connors' paper shows the great value of transvenous approach in an arteriovenous fistula The number of cases on record is comparatively small I compiled about twenty-five cases I have operated in fifteen cases by the transvenous route Most European investigators assumed they were the originators of the method, but it is deplorable that they did not utilize it before, when all the details were published ten years ago The method is particularly applicable to cases of long standing in which there is a large varicose ampulla in case of direct fistulous communication, in which the vessels lie in apposition The ideal is to preserve both vessels if you can When you cannot save both vein and artery, save the artery It is usually done perfectly by this means

DR HENRY O MARCY, Boston In reference to suture material and its method of application fifty years or more ago I first applied it in a general way to the cure of hernia With a fine needle with an eye near the point, I use it as a shuttle, making the shoemaker stitch, but daintily as a lady makes her lace, and with it I have accomplished results I failed to obtain with the ordinary suture The material that I have found best is the kangaroo tendon suture, rather than silk Silk is a foreign body at best and has given me trouble in aseptic wounds, and, therefore, I feel it is a contribution of the largest possible value to suture the vessels in the dainty way the seamstress does her work

DR WILLY MEYER, New York Once I came near to suturing the lowest end of the abdominal aorta A man in the sixties, with advanced myocarditis and endocarditis, suddenly developed a most acute, intensely painful anemia of both lower extremities The diagnosis was embolic closure of the lower aorta I operated, but made the mistake of putting the man in a high Trendelenburg posture in order to reach the beginning of both common iliac arteries After division of the posterior peritoneum, just as I was ready to incise the vessel the anesthetist reported "no more pulse" What had occurred? It was evidently a case of acute dilatation of the right heart in the presence of a weak myocardium If I had

left that patient on his back and eventrated the intestines, I would probably have been able to avoid the accident Vessel suture is most important. Many of us have done it on the internal jugular vein As a young man, I once assisted Dr Robert F Weir in suturing the inferior vena cava in excision of a tuberculous kidney including its thickened capsule The patient recovered In reference to the so-called "reversal of the circulation'—a bad misnomer—in thromboangiitis obliterans, I had under my care a young fellow with thrombo-angiitis obliterans and gangrene I proposed operation on the femoral artery and vein I had no special training in blood vessel surgery, but had repeatedly watched Dr Carrel work. I anastomosed the femoral artery with the vein in Scarpa's triangle, making a typical end-to-end arteriovenous anastomosis The patient made a good recovery today, after eight years he represents the best result I have ever seen of all the various treatments of thromboangiitis obliterans That man is able to walk for miles While other patients of this type after about fifteen or sixteen duodenal flushings with 10 quarts of Ringer's solution daily lose their pain, they hardly ever lose the claudication I believe one should do the blood vessel operation for this disease much more frequently, in selected cases

DR. HARRY G SLOAN, Cleveland In the course of an excision of a recurrent carcinoma of the jaw, necessitating dissection in the deep planes of the neck I accidentally nicked the internal carotid artery low down in the neck where it was involved in a mass of scar tissue from a previous operation Before we had stopped the bleeding the vessel was caught by hemostats which immediately cut through the sclerosed walls The possibilities were ligation or repair by suture. We determined to excise the damaged portion of the artery and close by end-to-end suture The systolic blood pressure was 185 The vessel was very much sclerosed so that in preparing the ends of the vessel for the suture little bits of the vessel wall pulled off like pieces of an uncurled spring but we finally succeeded in joining the vessel end to end by the original Carrel technic The circulation was shut off for thirty minutes, but on the completion of the suture the temporal pulse was immediately felt Convalescence was uneventful The temporal pulse has persisted and when I saw the patient a few days ago a year after the operation, it was quite normal

DR. JOHN F CONNORS, New York I agree with Dr Matas as to the time these operations should be done. The suture method described by Dr Horsley is practically the method I used

DR J SHELTON HORSLEY, Richmond, Va I spent many years of my life in experimental work in arterial suturing and naturally I am very much interested in it I do not believe that we can promote anything unless we face the facts and the field of usefulness of arterial suturing has contracted Several years ago I did some experiments in which I reversed the circulation, killing the dogs from half an hour to sixty-nine days after the operation I injected the artery just above the reversal and made roentgenograms and dissections In no single instance did the injected mass go much below the knees What was the cause of the excellent results in Dr Meyers case? A certain number of these cases of "reversed circulation' do get better In obliteration of the artery, the vein is usually but little affected The tissues take up nutrition from the arterial blood in the capillaries Say the normal time is three seconds The arterial blood in the capillaries, instead of staying three seconds, is drained away by the unobstructed veins in two seconds When the circulation is reversed (so-called) the venous side is obstructed and the arterial blood stays in the capillaries longer This obstruction of the veins can be done more simply by cutting down on the femoral vein and putting a ligature around it This can be done in ten minutes under local anesthesia It obstructs venous circulation dams back the venous blood in the capillaries and makes the arterial blood stay longer in the capillaries than if the venous circulation were unobstructed Every possible benefit is obtained that could be gotten by so-called reversal of circulation

EXPERIENCE WITH MORE THAN ONE HUNDRED CASES OF EPIDEMIC ENCEPHALITIS IN CHILDREN *

JOSEPHINE B NEAL, M D
NEW YORK

The scope of this paper permits only the briefest reference to the extensive literature that has grown up during the last four years around epidemic encephalitis The articles referring to the disease, especially in children, however, have been comparatively few Batten and Still,[1] Netter,[2] Comby,[3] Heiman,[4] and others [5] have contributed to this phase of the subject, reporting, however, comparatively few cases Indeed, earlier, it was thought that adults were much more subject to the disease than children In fifty-four early cases studied by Netter, 77 per cent of the patients were more than 15 years of age, and in London 86 per cent of patients in early cases were more than 10 years of age [6] In an earlier article from the meningitis division, it was pointed out that perhaps a number of cases in children were overlooked as approximately half our patients were 15 years of age or younger Further epidemiologic study has confirmed this opinion In a recent and very thorough study by Happ and Mason [7] slightly more than half their eighty one cases were in this age category Up to the middle of May, I had studied 274 cases in exactly half of which (137) the patients were 15 years of age or younger The exact age distribution is shown in the accompanying table One hundred and twelve, or 40 per cent, of the patients were 10 years of age or younger

AGE DISTRIBUTION

Age	No of Cases
3 months	4
From 3 to 6 months	4
From 6 to 12 months	8
From 1 to 2 years	20
From 2 to 5 years	29
From 5 to 10 years	47
From 10 to 15 years	25
Total	137
From 15 to 20 years	15
From 20 to 30 years	56
From 30 to 40 years	33
From 40 to 50 years	24
Over 50 years	9
Total	274

In contrast to this, in about 65 per cent of cases of epidemic meningitis and about 90 per cent of cases of poliomyelitis, the patients are under 10 years of age As regards sex, about 50 per cent more males than females are attacked by the disease, but this also holds true of epidemic meningitis and poliomyelitis The seasonal distribution of our cases in New York City is indicated in the chart, and shows that the maximum number of cases occurs in the first quarter of the year

* From the Research Laboratory Department of Health New York City

* Read before the Section on Diseases of Children at the Seventy Second Annual Session of the American Medical Association Boston June 1921

1 Batten F E., and Still G F Lancet 1 636 (May 4) 1918

2 Netter A Bull et mem Soc med d hop de Paris March 22 1918 Bull de l Acad de med 79 337 (May 7) 1918 Bull et mem Soc Med d hop de Paris 43 300 (April 4) 1919 Bull Acad de med 83 45 (Jan 6) 1920

3 Comby J Arch de med d enf 22 259 (May) 1919

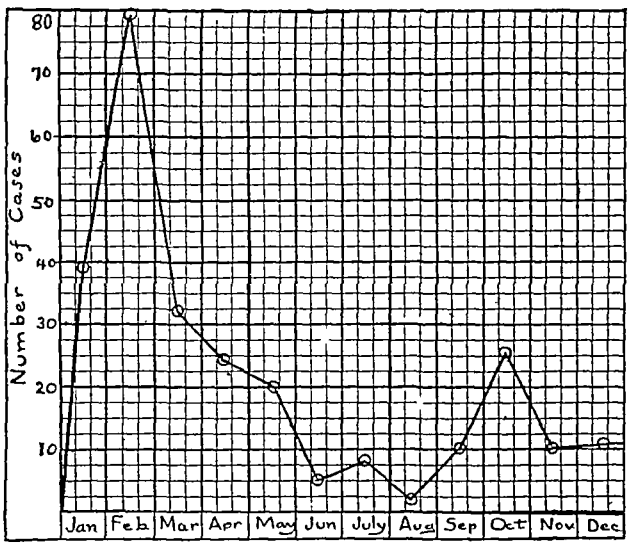
4 Heiman H Am J Dis of Chil 18 83 (Aug) 1919

5 Tilney F and Riley H A Neurological Bull 2 106 (March) 1919 Neal Arch Pediat 37 321 (June) 1920

6 Local Government Board on Public Health and Medical Subjects N S 121 England

7 Happ and Mason Bull Johns Hopkins Hosp 32 137 1921

Our sporadic cases of epidemic meningitis during the last eleven years have shown the maximum number in April, May and June, while poliomyelitis is usually at its height during the summer months While epidemic encephalitis is accepted as being an infectious disease, the percentage of those susceptible to it is certainly very low In only one instance have we seen two cases in a family The two patients became sick on the same day, and no outside source could be traced The reports of instances of traceable contagion are very few This difficulty in tracing disease is encountered also in epidemic meningitis and poliomyelitis, and may point to a high resistance to these diseases on the part of the majority of people We have observed two or three points in connection with the study of our cases which may be of some interest One patient while convalescing from encephalitis contracted epidemic meningitis, probably from a patient in an adjoining bed in the hospital Instances of such direct contagion in hospitals, as we all know, are very rare One patient gave



Seasonal distribution

a history of epidemic meningitis a year before Two patients were mentally defective Four had suffered from attacks that were probably poliomyelitis One patient after a year of good health died from a second attack of encephalitis, so far as the diagnosis could be made in both instances

No attempt has been made to divide our cases into clinical types because we are evidently dealing with a virus that may attack any part of the central nervous system or any combination of parts This obviously gives rise to a great variety of types Moreover, a given case in its development often passes through several phases representing different types For these reasons, an attempt at classification has seemed undesirable

SYMPTOMATOLOGY

The symptoms in children do not differ greatly from those in adults A rather larger precentage of children show a sudden onset, and the course of the disease is ordinarily shorter than in adults, although the mortality is approximately the same The symptoms comprise both those of a generalized infection, such as fever, headache, vomiting, constipation and malaise, and those more directly referable to the central nervous system The latter show an almost endless variety Lethargy was so prominent a symptom in many of the cases that the term "lethargic" was earlier used in describing the disease This, however, is by no means a constant symptom Indeed ,insomnia is an equally striking phenomenon in many cases, and in some patients both conditions may be present at different times Convulsions are common, especially in younger children In many cases delirium is present, occurring either for a considerable time or for short intervals, lasting not more than ten or fifteen minutes and being repeated frequently

Ocular disturbances are of very frequent occurrence and are of wide variety They may take the form of diplopia, blurring of vision, blindness, ptosis, either unilateral or bilateral, strabismus, nystagmus, and occasionally peculiar motions of the eyes In one instance there occasionally took place convulsive twitchings of the eyes which then snapped quickly to the left, and remained fixed for two or three minutes These seizures occurred at frequent intervals during the height of the disease, but disappeared entirely as the patient recovered In another case the eyeballs performed in succession a curious, nearly complete rotation with the pupils looking inward While one eye was in motion the other eye remained quiet, but there was more or less twitching of the lips and of the face muscles on the same side

Hippus has been observed in two or three cases in adults I have not seen it in children

Paralyses of wide distribution may occur The cranial nerves are more often affected Facial paralysis or paresis, either unilateral or bilateral, is often present and probably causes the masklike expression so often noted In some instances the neck muscles have been affected, in one case this was unilateral Inability or unwillingness to swallow may occur to such an extent as to make tube-feeding necessary Disturbances of speech are not uncommon The one I have observed most frequently is that in which the patient speaks in a slow, monotonous slurring voice, with considerable delay before answering questions Some cases are extremely talkative In a number of instances under my observation, patients have refused to speak for a varying length of time Twitchings, either general or localized, are a very common phenomenon They vary from a fine tremor to choreiform movements Catatonia is not infrequent The reflexes show all varieties of change They may be increased, decreased, lost, equal or unequal The Babinski sign and ankle clonus are not uncommon Retention or incontinence of urine occasionally occurs Constipation is often obstinate Profuse sweating is fairly common The more typical meningeal symptoms, such as stiffness of the neck and the Kernig sign, are not common, unless associated with some degree of general spasticity

The course of the disease varies greatly, from two or three weeks to many months The prolonged cases, lasting several months, are less common in children than in adults The course of the disease is often marked by sudden rather transitory changes either for the better or the worse, and one must, therefore, be guarded in making a prognosis from a single inspection of the patient A sharp and unexplained rise in temperature occasionally occurs Pneumonia may develop during the course of the disease and is a dangerous complication A rather common type of the disease in

children is that in which there are none of these more striking phenomena There is a history of a gradual onset, a varying degree of drowsiness, headache, vomiting, constipation, low, irregular temperature, and some changes in the reflexes The diagnosis of early tuberculous meningitis is suspected, but after one or two lumbar punctures, in which the spinal fluid does not corroborate this diagnosis, the case clears up

LABORATORY FINDINGS

The blood count in epidemic encephalitis varies from normal to one showing a moderate degree of leukocytosis, perhaps up to 15,000 or 20,000 Blood cultures are sterile The urine is negative or shows a mild degree of nephritis common in acute infectious conditions The examination of the spinal fluid throws more light on the subject than any other laboratory procedure The spinal fluid shows practically the same picture as in poliomyelitis It is clear and usually increased in amount A web rarely forms The cell count may sometimes be normal It is usually moderately increased, ordinarily to no more than 100 or 150, though in one case it ran as high as 1 500 ,The mononuclears usually predominate, but as in poliomyelitis there may occasionally occur a preponderance of polymorphonuclears As in poliomyelitis, the fluid may in rare instances be slightly blood tinged, probably indicating a more than usually severe hemorrhagic process The albumin and globulin are increased, usually slightly to moderately The glucose, as measured by the qualitative reduction of Fehling's solution, is normal Quantitative studies by various workers, among them Foster,[8] have shown that it is sometimes slightly increased above normal I do not feel that this knowledge is of great diagnostic value. Different workers vary in their estimation of the glucose in normal fluid In quantitative work done in the meningitis division [9] in 1916, it was found by Kahn that the glucose in poliomyelitis fluids frequently ran from 0 08 to 0 10 per cent , also an increase above the normal

The Wassermann reaction is negative The colloidal gold curve is not characteristic When the disease first made its appearance, many of the English writers and some in France and America reported normal spinal fluid findings, but most of the recent writers have reported findings similar to those described above It will be seen from this description that these findings are not diagnostic of epidemic encephalitis, as similar findings may occur in poliomyelitis, in brain abscess, brain tumor, and except for the Wassermann test and colloidal gold test, in syphilitic conditions of the central nervous system, all being conditions in which the brain substance is primarily involved, with the meninges being secondarily affected Such findings also occur early in tuberculous meningitis They do show, however, that there is an inflammatory reaction in the central nervous system, and they are of value in ruling out other conditions in which meningism occurs with symptoms referable to the central nervous system but without an actual inflammation being present

While much work has been done to determine the specific etiologic factor of epidemic encephalitis, the results obtained by different workers have been by no means in agreement The work of Loewe, Strauss and Hirshfeld,[10] has been in part duplicated by Levaditi and Harvier [11] Other workers have reported negative results in their attempts to corroborate this work In view of these facts we must feel that the exact etiologic factor has not been fully established Loewe, Strauss and Hirshfeld, and Levaditi and Harvier believe that they have established that the disease can be transmitted to rabbits and monkeys, and that it is due to a filterable virus in many respects similar to that considered to be the cause of poliomyelitis

DIFFERENTIAL DIAGNOSIS

Since this disease is so protean in its clinical manifestations and since there are no laboratory findings that are absolutely specific, the diagnosis must be made largely by exclusion In the case of children, tuberculous meningitis is the disease from which it must be most often differentiated, and this differentiation is by no means easy The onset, while usually gradual in both, is more often abrupt in encephalitis, and in this type of case death may occur within seven to ten days, a shorter duration than tuberculous meningitis usually has On the other hand, patients suffering from encephalitis sometimes die after a course of two or three months, a longer period than cases of tuberculous meningitis show Diplopia is occasionally present in tuberculous meningitis, and transient paralyses especially of the cranial nerves are common So also is loss of reflexes Other neurologic manifestations that have been described in epidemic encephalitis are rare Evidences of tuberculous lesions elsewhere, positive tuberculin reaction, tubercles in the choroid, and so forth, are also of help in making the diagnosis of tuberculous meningitis The examination of the spinal fluid in the last analysis must often be the final factor While the spinal fluids may not be dissimilar early, as a rule even fairly early the spinal fluid in tuberculous meningitis will have a higher cell count and a greater increase in albumin and globulin than is the rule in encephalitis, even though the reduction of Fehling's solution be normal As the disease progresses, the reduction of Fehling's solution in cases of tuberculous meningitis will practically always become diminished or absent, and it is possible in a large percentage of cases to demonstrate the tubercle bacilli in the smear If this cannot be done, the result of animal inoculation must be awaited Films form almost invariably in fluids from tuberculous meningitis, and only occasionally in fluids from epidemic encephalitis

The diagnosis from poliomyelitis, especially the encephalitic form, is practically impossible except by neutralization tests of the blood serum These tests are difficult to perform and are not always conclusive Amoss [12] has shown that the serum from recovering cases of encephalitis has no power in neutralizing poliomyelitis virus Of course, the onset of poliomyelitis, even of the encephalitic type, is more frequently abrupt than is that of encephalitis There is likely to be a higher temperature early, which soon subsides, there is more frequently diarrhea in poliomyelitis, while constipation is the rule in encephalitis The pupils

8 Foster H E Hyperglycorachia in Epidemic Encephalitis J A M A 76 1300 (May 7) 1921

9 Neal Josephine B Abrahamson H L and Associates A Study of Poliomyelitis, Arch Int Med 20 341 (Sept) 1917

10 Loewe L and Strauss I Etiology of Epidemic (Lethargic) Encephalitis J A M A 73 1056 (Oct 4) 1919 id Diagnosis of Epidemic Encephalitis Values of Nasopharyngeal Washings and of Cerebrospinal Fluid J A M A 74 1373 (May 5) 1920 Jour Infect Dis 27 250 (Sept) 1920 Loewe L Hirshfeld S and Strauss I J Infect Dis 25 378 (Nov) 1919 Strauss I Hirshfeld S and Loewe L New York M J 109 772 (May 3) 1919

11 Levaditi C and Harvier P Ann de l Inst Pasteur 34 911 1920

12 Amoss J Exper Med 33 187, 1921

in poliomyelitis practically always react to light, while in encephalitis the reaction is often sluggish Moreover, even in epidemics of poliomyelitis, the encephalitic form is rare The age and season must also be considered All these factors are helpful, although not final, in differentiating the two conditions The spinal fluid findings are so similar that they are of little aid in making the diagnosis

Brain tumor and abscess of the brain must also be differentiated, and these conditions have proved a stumbling-block to very able neurologists Brain tumor is comparatively rare in children It is usually afebrile, and a roentgen-ray examination should be of value A choked disk is, of course, much more common in this condition than in encephalitis The spinal fluid findings vary greatly in brain tumor, so that in this condition they will not be of so much diagnostic value Abscess of the brain is rare and is usually accompanied by some demonstrable primary focus In abscess of the brain, the blood culture is frequently positive

Syphilitic conditions of the central nervous system must always be considered, and they may be ruled out with a fair degree of assurance by the result of the Wassermann test and the colloidal gold test of the spinal fluid Cerebral hemorrhage, thrombosis or embolism are of less importance in children than in adults Of course, a cerebral embolism with an endocarditis occasionally occurs in children, and must be differentiated from both poliomyelitis and encephalitis Uremic conditions must also be considered, and must be ruled out by the urinary examination, and the test of the kidney function

The diagnosis from various acute forms of purulent meningitis is usually easy clinically, and may be made absolutely by the examination of the spinal fluid

Of course, the diagnosis must also be made from acute infections in children, in which convulsions develop, and sometimes stupor, such as typhoid, pneumonia, and severe gastro-enteritis, but these can usually be easily ruled out by finding the underlying cause and by various laboratory tests, as well as by a test of the spinal fluid, which, in these conditions, is usually normal

REPORT OF CASES

CASE 1—F A, a girl, aged 5 years, with no history of previous illness, had a gradual onset about Oct 1, 1920 The child was listless and apathetic, slept a great deal, vomited once, had no headache, the bowels were constipated, and there was loss of sphincter control of both bowel and bladder about October 12 When examined, October 20, she was apathetic, the temperature was normal, respirations were regular, and the pulse varied in rate from time to time, the pupils were equal, and reacted to light, there was no stiffness of the neck nor Kernig sign the reflexes were present and equal, and there was no paralysis Lumbar puncture gave about 35 c c of clear fluid under pressure This showed a slight increase in mononuclear cells, and also in albumen and globulin The reduction of Fehling's solution was normal Soon after this the child refused to speak This lasted for about two weeks Then speech returned, and the incontinence finally cleared up about the middle of November At last reports she showed complete recovery physically, but was still nervous and irritable

CASE 2—G L, a girl, aged 5½ years, gave a history of poliomyelitis in 1916, with paralysis of right arm and leg The paralysis of the leg had nearly cleared up but that of the arm remained The onset of the disease occurred the latter part of January, 1921, with headache, vomiting, convulsions, and a temperature up to 103 F When seen February 14, she was crying out constantly and apparently could not see The temperature was still around 103 F, and 20 c c of clear fluid was withdrawn This fluid showed 460 cells—90 per cent mononuclears, albumin and globulin + + |, and Fehling's solution normal After the puncture, the temperature subsided The child screamed almost constantly for several days, and then began crying real tears She paid no attention to questions, indeed, did not speak at all These symptoms lasted about ten days, then the condition improved The child began to speak but was at first slow in remembering and in speaking The sight returned The condition was very satisfactory until March 13, when the child was taken for an automobile ride In the afternoon, she had a convulsion and became unconscious, Cheyne-Stokes respirations developed, with feeble, rapid pulse, and marked cyanosis Lumbar puncture was done in the afternoon, showing clear fluid, greatly increased pressure, 35 cells, albumin and globulin + |, and Fehling's solution normal Next day the patient seemed practically well, but continued to have a slight rise of temperature for several weeks She is now reported as entirely recovered

The next case has been previously reported,[5] but is included now on account of the sequelae

CASE 3—E M, a girl, aged 14, gave a history of measles, and paralysis of the left arm and leg, probably poliomyelitis which developed some years before and had practically cleared up The present illness developed rather slowly, beginning about January 12, with apathy, tremors and subnormal temperature (96 F) the chief symptoms She had grown progressively worse and when examined, January 16, had the appearance of being in a very serious condition Her temperature was still 96 F, she was sweating profusely, catatonia had developed, and there were marked tremors She was extremely apathetic and apparently in a semistuporous condition but she answered questions correctly, though very slowly and in a monotonous voice The neck was moderately stiff and there was a question as to the Kernig sign, since there was generally spasticity of the muscles The knee jerks were equal and exaggerated The pupils were equal and responded to light There were no disturbances of vision Lumbar puncture revealed clear fluid under increased pressure, a moderate increase in cells, 90 per cent mononuclear, albumin and globulin ++, and Fehling's solution normal For about a week following, the temperature was slightly elevated, the neck was rigid and the patient was troubled with insomnia Thereafter she slept for about seventeen hours and then began to improve rapidly She returned to school and seemed perfectly well until late in June, 1920 During the summer of 1920 she became very indifferent, disliked doing anything about the house, or taking care of her person, and was extraordinarily slow in accomplishing any task, even a very simple one When seen in October, memory was good, but she spoke in a monotonous voice, and very slowly, and the face was expressionless except for frequent silly giggles The muscles were spastic and reflexes exaggerated but she was able to walk about, though very slowly and with a spastic gait This condition became progressively worse and when seen in May, 1921, she was unable to walk without being practically carried She could not sit down or rise from a chair without a great deal of assistance, there was a constant tremor of the hands and feet, the muscles of the whole body were extremely spastic, she had difficulty in swallowing, and the voice was monotonous and slow, but memory was still good, and she seemed to have considerable insight into her condition She still had a rather silly laugh but it seemed to come from difficulty in muscle control rather than from lack of intelligence She had obstinate constipation and there was frequency of micturition Such a development after four or five months of apparent recovery is a striking commentary on the sequelae which so often follow this disease The final outcome of this case will be a matter of great interest

SEQUELAE

That the effects of the disease may be prolonged for many months and that symptoms may develop after a period of apparent return to health has been pointed

out by Abrahamson,[13] Happ and Blackfan,[14] Leahy and Sands,[15] Happ and Mason[7] and others I have tried as far as possible to follow up our recovered cases at varying intervals

On account of the great interest centering around the sequelae, I have included those in adults as well as in children They seem to develop more frequently in adults than in children Up to the end of March, sixty-three cases, or 39 3 per cent of the recovered cases, showed sequelae for varying lengths of time after the subsidence of the acute symptoms In these cases, twenty-one patients were less than 15 years old, and forty-two were adults A part of this difference may be due to the greater ease in eliciting in adults certain conditions, such as headache, mild grades of mental deterioration, or lack of power to concentrate It is, of course, too early to decide as to the permanence of the sequelae However, three out of ten recovered patients, in 1918 are still showing some results of the disease And it is possible that some of the more recent cases that now seem to be complete recoveries may develop sequelae in the next few months

Like the symptoms, the sequelae are also varied, and it is difficult to group them in any very satisfactory way Moreover, one patient often shows several sequelae

In a general way they may be loosely classified as

Weakness or paralysis Adults 8, children, 4
Tremor, choreiform movements, spasm Adults, 6, children 3
Pains in body or limbs Adults, 2
Headache Adults, 8
Dizziness Adults, 3
Nervousness Adults, 5, children, 6
Change in disposition Adults, 1, children, 3
Insomnia Adults, 3, children, 2
Drowsiness Adults, 1, children 3
Speech defects Adults 6, children, 3
Defect of Eyes Adults 9, children 4
Change in mentality Adults, 14, children, 10

The changes in mentality are of great interest In children there are usually indications of mental deterioration—the child is demoted in school, when previously it had made good progress In adults there is loss of memory and of ability to concentrate, in the milder cases, and sometimes mental depression In one instance a young woman committed suicide during convalescence One man was at a hospital for the insane for some months, but was finally paroled A woman has been at such an institution for over a year

It is interesting to compare these frequent, diverse and serious sequelae with those of poliomyelitis and epidemic meningitis In the former, the sequelae are certainly sufficiently grave, but they are confined almost entirely to flaccid paralyses In meningitis only a very small percentage of sequelae occurs The most serious is deafness, and this occurs in only 3 or 4 per cent of cases Blindness, due practically always to a panophthalmitis, is still more rare While a popular opinion exists that mental defects are often due to meningitis, a careful study of recovery cases of meningitis fails to corroborate this opinion

Relapses after comparatively short periods of improvement occasionally occur In one instance, already referred to, there was a second attack, at the expiration of a year of good health, which proved fatal

MORTALITY

The mortality reported by various writers has varied greatly In France it has been around 25 to 30 per cent and in England as high as 50 per cent In this country, Abrahamson[16] reports a mortality of only 10 per cent, and Happ and Mason[7] a mortality of only 7 4 per cent, while others have reported a mortality as high as 40 per cent Smith[17] gives a mortality of 29 per cent In our series of cases, it has been about 28 per cent

TREATMENT

The general treatment is of great importance and consists, in brief, in general hygienic measures, keeping the patient comfortable, quiet, and well nourished Feeding by gavage may be necessary There must be careful attention to the elimination, as constipation is often persistent and obstinate, and retention may occur While numerous drugs and intraspinal injections have been used, the degree of success attending any of these measures has been small Lumbar punctures for the relief of pressure have seemed of value to me and are recommended by many writers The patient should be carefully watched during convalescence, and one should not be too hopeful of a complete cure until some months have passed

426 East Twenty-Sixth Street

ABSTRACT OF DISCUSSION

DR FRANK C NEFF Kansas City, Mo Recently, in the same week, two children died who had a similar symptomatology, in the first case, a child, apparently in good health, went into a convulsive state The physician wondered whether smallpox existed, as an eruption appeared resembling smallpox, especially on the palms and soles This child died after forty eight hours, without regaining consciousness Sections of the brain are typical of the description of encephalitis The second child was seen in a convulsive state from which it did not recover The child died in about thirty-six hours We were at a loss to explain the case, unless it was one of epidemic encephalitis The necropsy showed a normal brain, but the thymus was enlarged, weighing about 30 gm, and there was a general lymphatic hyperplasia, there was no other pathologic condition to explain the death

DR GEORGE W HALL, Chicago Our experience in Chicago has been limited more to adults One test is of value in the differential diagnosis between encephalitis and tuberculous meningitis, namely, the sugar content in the spinal fluid Invariably it is below normal in tuberculous meningitis, while it is normal or increased in amount in cases of epidemic encephalitis

DR JOSEPHINE B NEAL, New York I agree with Dr Hall in regard to the value of a diminished content of sugar in the spinal fluid in making a diagnosis between tuberculous meningitis and epidemic encephalitis We rely on it very much in those cases in which we are not able to demonstrate the tubercle bacilli in the smear An increase of sugar in the spinal fluid of epidemic encephalitis, when present, is not of much diagnostic value as a similar increase is found in the spinal fluid in poliomyelitis We are not often called to see patients until they have been sick several days, so that those that die within thirty-six or forty-eight hours are not likely to come under our observation General lymphatic hyperplasia with sudden death from a slight cause, should undoubtedly be considered in the differential diagnosis of fatal cases

13 Abrahamson I Arch Neurol & Psychiat 4 42 (Oct) 1920
14 Happ A M and Blackfan K D Insomnia Following Epidemic (Lethargic) Encephalitis in Children J A M A 75 1337 (Nov 13) 1920
15 Leahy S R and Sands I J Mental Disorders in Children Following Epidemic Encephalitis J A M A 76 373 (Feb 5) 1921
16 Abrahamson I New York M J 110 17 (July 5) 1919
17 Smith Pub Health Rep 34 207 1921

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SATURDAY, JULY 9, 1921

DO BACTERIA SUFFER FROM INFECTIOUS DISEASES?

As is well known, for every pathogenic microorganism discovered many nonpathogenic varieties of the same type have been found in nature, and it seems highly probable that the same rule will be found to hold good in the case of ultramicroscopic viruses It is difficult, however, to obtain proof of their existence, as pathogenicity is the only evidence we now have of the presence of an ultramicroscopic virus On the other hand, it seems probable that if nonpathogenic varieties exist in nature, these should be more easily cultivated than the pathogenic varieties In 1915, Twort[1] reported from London some unexpected results obtained while seeking evidence as to the existence of such nonpathogenic ultramicroscopic organisms Many materials were investigated in the search, and finally an intensely interesting observation was made with glycerinated calf vaccine Cultures from this vaccine yielded colonies of micrococci, subcultures of which could not be made, and after a time these colonies became transparent because of disintegration of the cocci Further study disclosed that if material from such a dissolved colony was brought in contact with an ordinary colony, the process of solution would soon spread into the latter and often completely kill all the cocci in it If the material from a dissolved colony was diluted and filtered through the finest porcelain filters, the clear filtrate had the power to dissolve cocci, and to make culture mediums unsuitable for growth of the cocci A streak culture treated with such a filtrate soon shows spreading transparent areas of digested cocci, and colonies are eaten away from the periphery until sometimes no living cocci remain This coccus-destroying virus can be kept alive through many generations of transfers, cannot be grown independent of the cocci found in the vaccine, has some but much less action on staphylococci from human infections, and shows no pathogenicity for many species of animals on which it was tried Similar phenomena were discovered with an organism of the coli-typhoid group from the intestine of a dog, and with a bacillus from the intestinal contents in infantile diarrhea

These observations suggest at once the existence of ultravisible viruses pathogenic for bacteria, a possibility of enormous significance for the problems of infection and immunity They would undoubtedly have attracted much more attention if they had not been first presented when all eyes were turned to the problems of the war They raise the question whether bacteria themselves may not suffer from infectious diseases If so, there at once appears the possibility that a method of defense hitherto unrecognized may exist in nature, and perhaps be capable of artificial development to assist in combating disease What could be more brilliant than to cure bacterial infections by inoculating the victim with a virus deadly to the parasite and harmless to the host, a process which has already been successful in combating plant parasites, to say nothing of the use of rat typhoid virus to exterminate plague-bearing rodents?

Fortunately, Twort's observations have received confirmation In 1917, d'Herelle of the Pasteur Institute observed a similar phenomenon in dysentery bacilli The stools from convalescing subjects with dysentery, he found, may contain something which passes through porcelain filters, and which has the power of dissolving dysentery bacilli in cultures[2] This virus can be cultivated through repeated generations, and gives the impression of being a true ultramicroscopic organism, capable of multiplication, specifically pathogenic for the Shiga dysentery bacillus Nevertheless, this attractive hypothesis has not been accepted without contest, and other explanations have been advanced As Twort says, in the first place we do not know for certain the nature of an ultramicroscopic virus It may be a minute bacterium that will grow only on living material, or it may be a tiny ameba which, like ordinary amebas, thrives on living micro-organisms On the other hand, it must be remembered that if the living organic world has been slowly built up in accordance with the theories of evolution, then an ameba and a bacterium must be recognized as highly developed organisms in comparison with much more primitive forms which once existed, and probably still exist It is quite possible that an ultramicroscopic virus belongs somewhere in this vast field of life more lowly organized than the bacterium or ameba It may be living protoplasm that forms no definite individuals, or an enzyme with power of growth

Kabeshima,[3] especially, has contended that the bacteriolytic agent is an enzyme, presumably an autolytic enzyme produced by the bacteria themselves Thus, a minute quantity of active material will cause very rapid lysis of large quantities of bacteria, it remains potent at least four years at ordinary tempera-

1 Twort, F W Lancet **2** 124 (Dec 4) 1915

2 D Herelle's observations are published in a series of short articles in the Comptes rendus des seances et memoires de la Société de biologie, Paris 1917 to 1920 They are reviewed by Puntoni (Ann d Ig **30** 643 1920) by Gjørup (Hospitalstidende Copenhagen **64** 214 1921) and by Ameuille (Ann de med **9** 196 1921)

3 Kabeshima Compt rend Soc de biol **83** 471, 1920

tures, and it resists the action of such antiseptics as alcohol, chloroform, toluene, ether and phenol, furthermore, the active agent may be precipitated from solution with acetone or alcohol without destruction, and it may be dissolved and preserved in glycerin, it resists temperatures that kill ordinary bacteria, and is not thrown out of solution by centrifugation, as bacteria or spores would be Kabeshima believes that the agent is in the nature of a catalyst which activates the autolytic enzymes of the bacteria Others have suggested that the autolyzing bacteria merely represent selected strains of organisms with exalted autolytic activity Twort himself believed that the destructive agent must be something formed by the bacteria themselves, for he says "There is this, however, against the idea of a separate form of life if the white micrococcus is repeatedly plated out and a pure culture obtained, *this may give a good, white growth for months* when subcultivated at intervals on fresh tubes, eventually, however, most pure strains show a transparent spot, and from this the transparent material can be obtained once again"

D'Herelle is strongly convinced that the active agent is a true living organism which exists in the bowel normally, a bacteriophagum intestinale, which in normal conditions acts on the colon bacillus, but which may be an important defense in dysentery and other intestinal infections In typhoid, he reports that the clinical amelioration always coincides with the appearance in the feces of a strong bacteriophagic activity against typhoid bacilli[4] He says that he has cultivated a single strain through more than a thousand generations without loss of bactericidal property Gjørup also accepts the view that this is a true filtrable, ultramicroscopic virus pathogenic for bacteria, and he himself has observed the bacteriophagic action in diarrheas and typhoid Since the war, numerous investigators have turned their attention to this subject, and we may soon look for an active discussion of what possibly will develop into one of the most important fields of medical research

EXPERIMENTAL PRODUCTION OF TAR CANCER

Recently we reviewed some of the recent work on the experimental production of cancer[5] Another important contribution on the same subject is that by Professor Fibiger[6] of Copenhagen, who, it may be recalled, discovered that it was possible to produce carcinoma of the stomach and tongue of a rat by infecting it with a parasite (*Spiroptera neoplastica*) which has its natural habitat in certain species of cockroaches The difficulty with this form of experimental cancer is that it is not possible to remove the parasite, and so the fundamental proof of malignancy—namely, that the growth continue after the exciting cause is removed—cannot be obtained

Professor Fibiger has systematically repeated the work of the Japanese experimenters Yamagiwa, Ichikawa and Tsutsui, who produced carcinomas in rabbits and in mice by painting the skin with tar for long periods of time He has been able to corroborate this important observation in all details, having, in fact, much greater success than had the previous observers Thus, of thirty mice painted with tar for 103 days or longer, no less than twenty-four developed carcinomatous growths That these are true malignant neoplasms is shown by the fact that in several of them secondary growths were observed in the lungs or in the lymph glands, and in others the tumors were successfully inoculated into other mice for repeated generations Furthermore, the carcinoma continued to grow in many of these animals after the painting with tar was stopped These observations seem to answer any objections that may have existed as to the validity of the work of the Japanese scientists, and establish positively that the continued irritation of tissues by a chemical agent characterized by stimulating the cells to proliferation can of itself lead to the production of true malignant neoplasms

We have now experimental evidence that many different things may lead to the production of cancer These exciting agents have in common merely their capacity to stimulate tissue growth Presumably cancer cannot be due to one single identical cause such as a specific cancer parasite, but several or numerous factors of different origin and different nature may be active in exciting the epithelial cells to unlimited carcinomatous proliferation

AN EXPLANATION OF ORTHOSTATIC ALBUMINURIA

Among the types of so-called physiologic albuminuria, one of the most important has been designated variously as postural, orthostatic, lordotic or cyclic albuminuria It is characterized by the appearance of albumin in the urine, not continually but under conditions in which the patient assumes a vertical position The albumin output does not depend on muscular work or diet, for it is not regularly observed when the subject exercises or eats while lying down[1] The manifestation is most frequently observed in the earlier years during and following the age of puberty One observer has estimated its frequency as high as 19 per cent among adolescents, but this figure seems decidedly exaggerated, in the case of Americans, at least

It is well established that a large number of the patients lose their tendency toward postural albuminuria as they grow older This is one of the reasons that has been urged against the assertion that the symptom is

4 D Herelle Compt rend Acad d sc **168** 631 1919
5 The Experimental Production of Cancer editorial J A M A **76** 1404 (May 21) 1921
6 Fibiger Johannes and Bang Fridtjof Experimental Production of Tar Cancer in White Mice Det Kgl Danske Videnskabernes Selskab Biologiske Meddelelser **3** 4 1921

1 Hooker D R Postural or Orthostatic Albuminuria Arch Int Med **5** 491 (May) 1910

really referable in the first instance to a mild type of true nephritis [2] In the search for some other explanation, it has been suggested that cyclic or periodic albuminuria may be due to changes in the permeability of the cells lining the urinary passages and particularly to alterations in the glomeruli, so that proteins are not held back by the renal filter as they normally should be Hewlett [3] has commented that this does not seem to be susceptible of proof, hence, in common with others, he inclines to the hypothesis that orthostatic albuminuria depends on changes in the renal circulation

Interrelations between the appearance of albumin in the urine and pulse pressure but not arterial pressure per se have been described by American physiologists [4] Jehle [5] has placed emphasis on the marked lordosis commonly shown by persons exhibiting postural albuminuria There is an unusual anterior curvature of the spine in the region of the twelfth dorsal to the second lumbar vertebra This he believes to occasion a mechanical interference with the kidney circulation which disappears, as does the attending albuminuria, when the posture is corrected

If one assumes that this interference consists in a compression of the renal vein, it may be recalled that the anatomic relations are somewhat unlike with respect to the two kidneys They are not located at the same level Consequently, Sonne [6] of Copenhagen has suggested that the two kidneys should not be equally involved if compression of the renal vein by an anterior curvature is the etiologic factor An examination of six typical patients in the lordotic position by catheterization of each ureter separately has verified the assumption Typical orthostatic albuminuria was in each case associated with the left kidney only, in harmony with the belief that the postulated compression by the vertebrae involves the left renal vein to which they are approximated in the upright posture

HEMOLYTIC FEVER

There can be no doubt that marked rise in temperature may occur in the body under conditions in which infection cannot have a part The so-called aseptic fevers afford a characteristic illustration Not only have they been produced by administration of a variety of chemical substances, among them some of the purin derivatives, but febrile reactions are occasionally observed, without coincident infection, in cases of tissue destruction due to injury Fever has also been attributed to administration of substances of relatively simple chemical character Thus, one may read of "salt fever," alleged to be due to "unbalanced" saline solutions Furthermore, the so-called "water fever" has attracted considerable attention in recent years because of the rapidly growing practice of intravenous injection in therapy

The reactions produced in this way were attributed by Hort and Penfold [1] a few years ago to impurities in the water used They maintained that the usual distilled water is contaminated by a pyrogenic substance of bacterial origin It was asserted that if ordinary distilled water is freshly redistilled before injection, the so-called water fever never manifests itself As a result of this and similar widely reported statements, the practice of employing extreme precautions as to purity in the use of distilled water came into vogue everywhere

Contrary to the earlier reports, Yamakami [2] has observed at the Lister Institute in London that water, injected intravenously into animals, causes a fever of typical form even when it is redistilled immediately before the injection The fever, therefore, is not due to the contamination of water with a pyrogenic substance of bacterial origin, but it is to be attributed to its hemolytic property The explanation of the febrile response is sought by Yamakami in the products of the hemolysis brought about by water The type of the fever, the appearance of hemoglobinuria and albuminuria, and all other symptoms were quite the same as was observed to follow the injection of hemolyzed erythrocytes, or in the case of paroxysmal hemoglobinuria The transfusion of a perfectly unhemolyzed nonisolytic blood does not cause any appreciable temperature variation of the recipient, whereas the intravenous injection of the animal's own blood or nonisolytic blood of other animals, hemolyzed with water, causes a febrile reaction similar to that produced by foreign proteins It appears, therefore, that the intact erythrocytes can, as Yamakami expresses it, be accepted by the organism as its own property The liberated cell proteins, however, are by no means innocuous when they are discharged into the blood stream Therefore, the precautions to be exercised in the use of solutions for injection should include due consideration of the possibilities of hemolysis The damage which the organism may experience from the occurrence or introduction of specific hemolysins in the blood is already well known

2 Strauss H Die Nephritiden Berlin 1920 p 5 et seq
3 Hewlett A W Pathological Physiology of Internal Diseases New York D Appleton & Co 1917 p 413
4 Erlanger J and Hooker D R An Experimental Study of Blood Pressure and of Pulse Pressure in Man Johns Hopkins Hosp Rep **12** 145 1904 Gesell R A On the Relation of Pulse Pressure to Renal Secretion Am J Physiol **32** 70 1913
5 Jehle L Die Albuminurie Ergebn d inn Med u Kinderh **12** 808 1913
6 Sonne C Beitrag zur Aetiologie der lordotischen (orthostatischen) Albuminurie Ztschr f klin Med **90** 1, 1920

1 Hort and Penfold Proc Royal Soc London B **85** 174 1912
2 Yamakami K Hemolytic Fever, J Path & Bacteriol **23** 383 (Dec) 1920

Effects of Syphilis on Families of Syphilitics—In many cases of syphilis, the patient has been well for such a long time that the families are overlooked This is partially due to the fact that the patient suffering from a syphilitic complication may appear at a neurologic or heart clinic in which syphilis is naturally not the primary interest of the clinic As the majority of these patients come to the clinic for treatment many years after the original infection, the tendency to neglect the family is marked It is thus necessary from a practical, therapeutic standpoint to examine as a routine matter the family of the early and late syphilitic—Solomon, *Social Hygiene* **6** 470 (Oct) 1920

Current Comment

PERMEABILITY OF THE URINARY BLADDER

The textbooks of physiology are singularly reticent regarding the possibility of absorption from the urinary bladder Dependable knowledge on this point is especially desirable, however, in view of the fact that irrigation of the bladder with foreign fluids is not an uncommon procedure in present day therapeutic practice, therefore the possible fate of substances introduced into the large cavity lined with epithelium should be known Latterly, and particularly because of the contentions of Cohnheim,[1] it has been believed widely that the bladder epithelium is not a diffusion membrane and is impermeable even to water Studies which have been undertaken by Shōji[2] at the Institute of Physiology in University College, London, have clearly demonstrated that the epithelial layer of the bladder in the living subject is permeable to water and sodium chlorid under physiologic conditions, that is, when the concentrations are not extreme or unusual The bladder thus behaves, even during life, like other comparable physiologic structures with respect to the transfer of at least some common substances through its walls

WATER AND GASTRIC SECRETION

The contention of the Russian physiologist Pawlow that water is a stimulus to gastric secretion has been verified beyond question on man This effective response has naturally provoked the inquiry "Why does this happen?" The factors concerned are not merely psychic, as has sometimes been supposed, for Sutherland[3] has shown at the University of Chicago that water introduced intravenously will stimulate gastric secretion This investigator hesitates to use the word "stimulation" in this connection There is a continuous activity of the gastric glands, Sutherland comments, and the increase in available fluid in the blood stream makes the extraction of water by the gland cells easier or, in other words, hastens the passage of water and other blood constituents from the blood stream into the secreting cells, and out into the lumen of the stomach, together with the specific elements of the gastric secretion However, water introduced into the stomach may be particularly potent as a secretory stimulus, and this is true even when the introduction occurs by sound in such a way that the factor of taste is excluded The presence of food in the alimentary canal has an important effect in increasing the secretory response of the stomach to water Furthermore, and this is of practical significance, the gastric glands when in a state of relative activity respond more quickly and completely to a given stimulus than if relatively quiescent Sutherland suggests that since an amount of water too small to stimulate secretion by itself will shorten the latent period for a subsequent digestion secretion, it seems probable that, in the absence of appetite secretion in man, the drinking of a glass or two of water from half an hour to an hour before or at the beginning of a meal will facilitate the digestion secretion and thus partially compensate for the normal appetite secretion A generation ago both the healthy and the sick were earnestly warned against the harm of drinking water with meals The dilution of the gastric juice was believed to impair seriously its digestive potency Today it must be admitted that dilution by no means always impairs digestion, particularly when it becomes fortified by more vigorous secretion

1 Cohnheim Ztschr f Biol 41 331 1901
2 Shoji R On the Permeability of Epithelial Layer of the Bladder to Water and Salt J Physiol 44 238 (Dec 7) 1920
3 Sutherland G F Contributions to the Physiology of the Stomach LIII, On the Secretory Response of the Gastric Mucous Membrane to Water and Saline Solutions, Am J Physiol. 55 258 (March) 1921

THE LIVE WIRE MIND

When a mentality like Edison's sets questions, such as have been widely discussed and criticized, it behooves more commonplace minds to "stop, look and listen" Mr Edison, quite unintentionally, has stirred the educational world and, as in all such stimulations of the gray matter, we find ourselves getting "back to the Greeks" the source of all philosophical thinking and initiative The mind of an inventor is an inquiring one he is not content to tread the old beaten paths around, but tackles, directly, the obstacles in front To do this, observation of all sorts and conditions of things keeps the mind supple and alert Some of these queer shaped and unimportant bits of knowledge may be found to fit into these other equally odd shapes and, little by little, his picture puzzle reveals a perfect whole Who would have supposed that the study of the anatomy of the mosquito would reveal the true source of malarial fever, and that by this knowledge vast areas of the earth would be reclaimed for habitation? When Joseph Leidy noticed and questioned what might be the white specks in the ham served for his luncheon, his mind opened the way to the discovery of the parasite disease in pork, against the eating of which, as told in the Book of Leviticus, the Jews had blindly enacted laws centuries before The large majority of us are of the cog and ball-bearing type of mind Specialization today is begun so early that the foundations of knowledge and philosophical thinking are very narrow The question of moment to American educators is whether our schools and colleges are developing the greatest number of observers possible, or whether the ordinary student is constrained to tread the beaten paths with never a look to right or left and never an impulse to inquire into the mysteries that lie near by The man of the bush who first used ash or hickory for his ax handle was a greater observer than the college man who thought cork came from Ireland A man with an inquiring mind is what Edison calls a "live wire," interesting and interested, and in no way does this interfere with his being a highly specialized technical expert in any line he may be engaged in Is our system of education making for or against this mind development? It is not whether a man can answer correctly all these questions, but whether he is asking these and similar questions of himself when he meets them in his daily reading and conversation It was mind exercise and not mere knowledge that enabled the

Greeks to initiate, in physics, geometry, literature, art and on through a long list, the foundations on which we build today So, "back to the Greeks," who taught us observation, general and specific, with philosophical deductions Concentration has its advantages, but unless the object is held at sufficient distance, the observer looks cross-eyed and loses his sense of proportion

THAT NUXATED VICTORY

It was inevitable! We knew, when we first learned that the gallant Frenchman was coming to this country to dispute the World's championship, that he was beaten before he began to fight For he was going up against a nuxated champion Our readers will remember that it was "Nuxated Iron" that enabled Mr Jess Willard to wrest the championship from Mr Jack Johnson, and the same marvel made it possible for Mr William Harrison Dempsey, in turn, to administer the K O to Mr Willard The futility of the quest of Georges Carpentier thus becomes obvious We were, therefore, not surprised to find quarter-page advertisements in the newspapers of July 5, describing in detail how "Nuxated Iron" helped "Jack" Dempsey to whip Carpentier One wonders what would have happened had Dempsey taken the "Nuxated Iron" course previous to our entrance into the World War

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES NEW HOSPITALS, EDUCATION PUBLIC HEALTH ETC)

CALIFORNIA

Public Health Conference—The first annual meeting of the League for the Conservation of Public Health was held, June 24-25, at San Francisco, under the presidency of Dr Dudley A Smith

Meeting of County Medical Society—At a special meeting of the Los Angeles County Medical Association, held May 30, under the presidency of Dr Walter V Brem Dr George Tyron Harding Columbus, Ohio, brother of the President, made an address on "The Nervous Ex-Soldier"

COLORADO

Personal—Dr Carl A Hedbloom, Rochester, Minn, was awarded the degree of doctor of science at the commencement exercises of Colorado College, June 15 Dr Hedblom graduated from Colorado College in 1907

Organization of Clinical Pathologists—The clinical pathologists of Colorado have organized under the name of the Colorado Society of Clinical Pathologists, with Dr Philip Hillkowitz, Denver, as president, and Dr Ward T Burdick, Denver, as secretary and treasurer The membership will be strictly limited to those who confine practice to this branch

ILLINOIS

Typhoid Fever Situation—For the first six months of 1920 more than forty cases of typhoid fever were reported from Lake County Most of these occurred in Waukegan, North Chicago and Zion City While no unusual outbreak has appeared at these points, still the endemic nature of the situation indicates that sanitary conditions need to be materially improved During June there were eighty-eight cases of typhoid reported to the state department of public health Seven of these occurred in Joliet and Joliet township, seven in Melrose Park, and the remainder scattered throughout the state

State Department of Health to Make Exhibition at Pageant of Progress—The state department of public health will have an elaborate exhibition at the Pageant of Progress to be held in Chicago, July 30-August 14 Included in the exhibits are a number of mechanical models, operated electrically, that depict in a graphic and realistic manner various angles of the public health problems The department will occupy six 20-foot booths

Poliomyelitis Incidence Shows Increase—During the month of June, fifteen cases of poliomyelitis were reported to the state department of public health, which is an increase of three cases over that for the same month in 1920, when twelve cases were reported It is important to note that most of the fifteen cases half of which are in Lake County, have occurred during the last two weeks and that the incidence seems to be increasing with the sustained hot weather Physicians are urged to be on the alert for signs of poliomyelitis especially during the next two or three months, and to make prompt reports of any cases or suspected cases in order that proper control measures may be instituted

Chicago

Personal—At the annual meeting of the Medical Women's Club of Chicago, held June 1, Dr Katherine B Rich was elected president and Dr Blanche A Burgner, secretary

Chicago Physicians Decorated for Service in China—Dr James Edward Skinner and Dr Charles G Trimble associate physicians in charge of the Alden Spears Memorial Hospital at Yenping, China maintained by the board of foreign missions of the Methodist Episcopal Church have been decorated by the Peking government of North China for the distinguished professional services rendered to the government troops during the recent civil war in the province of Fukien

INDIANA

Judgment Against St Vincent Hospital—A judgment of $15,000 was awarded Robert Stine of Indianapolis against the St Vincent Hospital of that city by a jury in the Hendricks circuit court at Danville The jury was out twenty minutes and awarded the full amount sought in the suit Mr Stine was a patient in the hospital in March, 1917 According to the testimony, after an operation, while still unconscious, he was placed in a ward, where a nurse laid a hot water bottle on his foot and left him. The foot was so badly burned that an amputation was necessary a few weeks later

Hospital News—The city board of health, Indianapolis, authorized Dr Herman Morgan secretary, to arrange to negotiate a temporary loan of $230,000 to continue operation of the City Hospital and health department This loan is necessary because the indebtedness from former temporary loans must be met out of the present available taxes The board expects to eliminate its total indebtedness within a year or eighteen months The health board has taken under advisement a proposal by colored physicians of Indianapolis that colored nurses be substituted for white nurses in wards for colored patients, in order to relieve the shortage of nurses The plan was considered favorably if arrangements can be made that will not interfere with the present operation of the hospital——It has been announced that a new building to accommodate fifty neuropsychiatric patients with tuberculosis will be erected at the Marion National Sanatorium at Marion

KENTUCKY

An Advertising Chiropodist Convicted at Louisville—"Dr" Roy Newall of Chicago, an itinerant and widely advertised chiropodist, exhibiting appliances for use in the treatment of broken arches and other foot troubles, was arrested on the advice of the state board of health and, on trial before Hon Alfred T Burgevin, judge of the city court, was fined $50

An Itinerant Optometrist Fined in Livingston County—At the request of the state board of health, and through the activity of the county board of health, "Dr" Simon M Jacobstein an itinerant optometrist hailing from Louisville was prosecuted and fined $50 in the early part of June A certificate to practice optometry was issued to Jacobstein last year under the exemption clause of the new drugless practice law, and it is now expected that he will be cited to appear before the board at its coming meeting to show cause, if any he can, why his certificate should not be revoked for unprofessional conduct of a character likely to deceive and defraud the public.

MAINE

State Medical Meeting—The sixty-ninth annual session of the Maine Medical Association was held in Bangor, June 27-29 The meeting was presided over by Dr Theodore E Hardy, Waterville, president, and Dr George R Campbell, Augusta, first vice president The officers elected were president, Dr Addison S Thayer, Portland, president-elect, Dr Langdon T. Snipe, Bath, and secretary-treasurer, Dr Bertram L Bryant, Bangor

MARYLAND

Personal—Dr Roy R Reynolds, medical superintendent of the South Baltimore General Hospital, has resigned to specialize in diseases of the nose and throat Dr Robert W Johnson, University of Maryland 1912, will assume the duties of superintendent, July 1——Dr Kenneth B Jones has assumed his duties as superintendent of University Hospital

Medical Social Service Course at Johns Hopkins University—A new course in medical social service will be introduced at the beginning of the next scholastic year, beginning October 4 This course will be given by the department of social economics in cooperation with the Johns Hopkins Medical School and is listed among the graduate courses, leading to the degree of master of arts Instruction will cover a period of one academic year, but completion of the first year's study in the department of social economics, or its equivalent, is prerequisite The work will include lectures in various phases of psychiatric and general medical social service by members of the teaching staff of the university and the medical school Special field work will be required of students, and this will be done in the medical social service department of the Johns Hopkins Hospital

MASSACHUSETTS

Honorary Degrees at Harvard University—At the commencement of Harvard University, June 23 the degree of master of science was conferred on Carlos Chagas, Brazil, and the degree of doctor of science on Sir Robert Jones, London, England, and Herbert Charles Moffitt, professor of medicine, University of California

NEW YORK

Philippine Government Studies New York Health Methods—Dr Juan Fernando of the Philippine Health Service has spent the last six months in making an intensive study of the methods in use in the New York State Department of Health

Director of Tuberculosis Division Resigns—Dr Malcolm F Lent director of the Division of Tuberculosis of the New York State Department of Health, has tendered his resignation, effective July 1, in order to practice his specialty at Saranac Lake N Y Dr Lent was formerly superintendent of Stony Wold Tuberculosis Sanatorium, at Lake Kushaqua

Medical School Plans Expansion.—It is reported that the Syracuse University College of Medicine has acquired three pieces of property adjoining its present medical site preparatory to a proposed enlargement of the medical school campus A campaign for funds is being planned by Syracuse University, first to pay off an indebtedness, and later to provide for a general expansion of its various departments, including the medical school

New President for Cornell University—Dr Livingston Farrand chairman of the central committee of the American Red Cross and formerly professor of the University of Colorado, has been elected president of Cornell University Dr Farrand succeeds Dr Jacob Gould Schurman who resigned a year ago, after being president of the university for twenty-eight years, and whose appointment as minister to China has recently been confirmed

Personal—Dr Howard Lilienthal, Mount Sinai Hospital, New York, gave an illustrated lecture on surgery of the throat at the quarterly meeting of the Onondaga County Medical Society, held recently at Syracuse——Dr Willis E Ford, chief of staff of St Luke's Hospital Utica, since 1913, has resigned to devote his time to private work He was unanimously chosen chief of staff emeritus Dr Andrew Sloan has been elected to succeed Dr Ford

State Accused of Profiteering in Hospital—The American Legion's special investigating committee on insane and other mentally afflicted ex-service men now confined in the Manhattan State Hospital on Wards Island has requested the United States Senate and the authorities of New York state to conduct an inquiry to end alleged profiteering by the state The investigating committee claims that it found 200 ex-service men on Wards Island mixed with permanently insane and hardened cases under conditions that make it practically impossible to give them any special treatment The committee states that the state is paying only 90 cents a day, although the government is paying $2 a day for each government inmate The committee recommends the erection of the proposed Creedmoor Hospital on Long Island

New York City

Physician's Office Building—The Herter residence, at the southeast corner of Madison Avenue and Seventieth Street, valued at $200 000, has been purchased as a site for a five-story office building to contain only offices for physicians and surgeons

Personal—Dr and Mrs Joseph A Blake were booked to sail for Europe on the Cunarder *Berengaria* on July 4——Health Commissioner Dr Royal S Copeland is convalescing from an operation for empyemas following an attack of pneumonia

Gift for New York University—The Rockefeller Foundation announced a gift of $35 000 to New York University to increase facilities for teaching preventive medicine hygiene and sanitation at the University and Bellevue Hospital Medical College

Volunteer Hospital Prepares for Campaign—Gen Ballington Booth announces that plans have been matured for conducting a campaign to raise $500,000 for the Volunteer Hospital William McAdoo will act as advisory chairman of the drive, which will be conducted in September

Drive for Zionist Medical College—The American Jewish physicians have opened offices at 1225 Broadway to organize for the purpose of collecting funds to erect and equip a medical college in Palestine This central committee will have charge of organizing subcommittees all over the country

Sorgen Indicted—It is reported that Morris Sorgen, who, a year or two ago, advertised in the New York papers to furnish certificates for admission to colleges of medicine, dentistry, engineering, etc., "without Regents," has been indicted on the charge that he had secured money from several students by promising them entrance to medical schools without the requisite premedical training According to the testimony, he had even offered to get medical diplomas for $1,500 each

Promotions and Appointments in the Rockefeller Institute—The board of scientific directors of the Rockefeller Institute for Medical Research announces the following promotions and appointments Frederick L Gates, hitherto an associate in pathology and bacteriology, has been made an associate member, Frederic S Jones, hitherto an associate in the department of animal pathology, has been made an associate member, Goronwy O Broun, hitherto a fellow in pathology and bacteriology, has been made an assistant—— The following new appointments are announced E V Cowdry, associate member in pathology and bacteriology, Albert Fischer assistant in experimental surgery, William A Hagan assistant in the department of animal pathology, Albert B Hastings assistant in chemistry, Hugh J Morgan assistant in medicine, David I Hitchcock, fellow in general physiology, James M Neill, fellow in medicine——John Auer hitherto an associate member in physiology and pharmacology, has accepted a position as professor of pharmacology at St Louis University——Francis G Blake, hitherto an associate member in medicine has accepted a position as professor of medicine in Yale University School of Medicine ——J Harold Austin hitherto an associate in medicine, has accepted a position as professor of research medicine at the University of Pennsylvania——Glenn E Cullen, hitherto an associate in chemistry has accepted a position as associate professor of research medicine at the University of Pennsylvania——William C Stadie, hitherto an associate in medicine has accepted a position as assistant professor in medicine at Yale University School of Medicine——Martha Wollstein, hitherto an associate in pathology and bacteriology, has accepted a position as pathologist at the Babies' Hospital New York——Israel J Kligler hitherto an associate in bacteriology, has accepted an appointment with the Zionist Medical Unit in Palestine

NORTH CAROLINA

Organization of Tuberculosis Association—The organization of the Mecklenburg Tuberculosis Association was completed June 14 The assistance of Charlotte physicians has been promised by the Mecklenburg Medical Society in promot-

ing the new association One of the first undertakings will be the erection of a permanent fresh air camp for the treatment of tuberculosis patients under the supervision of a competent corps of physicians and nurses

PENNSYLVANIA

Health Centers to Be Opened—The state department of health has announced arrangements for the opening of health centers in the high school building at Kane and at Smethport Standard forms have been provided for a child health station to be opened by the Montgomery County Red Cross at Hoopston

Philadelphia

Personal—Dr Henry R M Landis, director of the clinical and sociological departments of Phipps Institute sailed, June 30, to attend the International Tuberculosis Union in London, July 25-28

Public School Medical Inspectors' Meeting—More than a hundred inspectors and nurses of the public schools of Philadelphia attended the organization's first annual dinner at the Hotel Walton, June 13 Dr Walter S Cornell, director of medical inspection of the Philadelphia public schools, was among the speakers Dr S Weir Newmayer was toastmaster

To Organize Chinese Society—A conference of Chinese physicians in this country took place at the International Clubhouse of the University of Pennsylvania from June 27 to June 30, inclusive, for the purpose of organizing a Chinese Medical Society in America Dr Me-iung-Ting, a student and intern in the Woman's Medical College of Pennsylvania, was secretary of the conference

Admiral Braisted Resigns—Admiral William C Braisted has offered his resignation, to take effect early in September, from the presidency of the Philadelphia College of Pharmacy to which he was elected last month The intent of this move is to make possible his reelection at the state meeting in September, so that there can be no challenging the validity of his office It was announced that the H K Mulford Company had given 200 acres of its land to the college for a botanic garden and research laboratory Dr Heber W Young was elected director

Hospitals' Nursing Council—Hospitals with a daily average of approximately 4,400 patients have become allied with the Council for Nursing Education of Southeastern Pennsylvania The Hahnemann Hospital and the Samaritan Hospital have been admitted to membership, bringing the number of hospitals represented to eleven The others are the University Hospital, Jefferson Hospital, Jewish Hospital, Bryn Mawr Hospital, the Hospitals of the Graduate School of Medicine of the University of Pennsylvania, the Frankford Hospital, the Children's Hospital, the Pennsylvania Hospital and the Philadelphia General Hospital

TEXAS

Malta Fever—Two cases of Malta fever have developed near Sierra Blanca The victims are goat herders Dr Manton M Carrick, Austin, state health officer, will make a personal investigation

Child Health Conference—Under the direction of the University of Texas and indorsed by the Harris County Medical Association, a child welfare conference was held at Houston June 6-11 The experiment of feeding a quart of milk daily for a period of thirty days to undernourished children was started on June 13

Provision for Examination Fees for Food Handlers—The board of health of Dallas passed the recommendation that the city commission appropriate a sufficient fund to provide for the examination at the city hall of all food handlers who do not prefer to go to a private physician Physical examinations for the food handlers is required by the state law

Personal—Dr Mark F Boyd, who recently resigned as professor of bacteriology and preventive medicine in the state medical college, has entered the service of the International Health Board of the Rockefeller Foundation and will be sent to Brazil about the first of the year as international health representative Dr Boyd will specialize in malarial control

CANADA

Hospital News—A new infirmary has just been erected in connection with the Muskoka Cottage Sanitarium, Gravenhurst, Ont

Dominion Council Results—The examinations for the Dominion Medical Council were held in June in Toronto, Winnipeg and Vancouver There were fifty-seven successful candidates

Smallpox Reduction—Smallpox, which has been more or less prevalent in different sections of Ontario, has of late been considerably reduced In June, 1920, there were 362 cases while in June of the present year the number has been brought down to 176

Course in Pediatrics—The Faculty of Medicine of the University of Toronto is making strong efforts to cater to the needs of medical men who wish to pursue a special line of study A four weeks' course in pediatrics begins July 4 To announce these courses bulletins are issued to practitioners four or five times a year

GENERAL

Public Health Meeting—The fiftieth annual meeting of the American Public Health Association is to be held in New York, Nov 14-18, 1921 Several other activities are planned by the Association in connection with their semicentennial meeting

Vote Soon on Sheppard-Towner Bill—A vote on the Sheppard-Towner bill for the protection of maternity and infancy will be taken in the Senate sometime in the early part of July Senator Kenyon of Iowa, chairman of the Senate Committee on Education and Labor, succeeded in obtaining the consent of the Senate for a vote in the near future

Diploma Mill Still Active—A news report indicates that diplomas in medicine and dentistry, issued by the Oriental University of Washington, D C, are being offered for sale at varying prices by certain individuals in New York Reports heretofore indicated that the institution named had been conducting its business mainly in foreign countries

American Electrotherapeutic Association—The thirty-first annual meeting of the association will be held, September 7-19, at Washington, D C., under the presidency of Dr Byron S Price, New York In addition to the scientific program, two hours daily will be given to the practical demonstration of how to use equipment to secure certain definite therapeutic results

American Gynecological Society—At the annual meeting of the society held at Swampscott, Mass, June 2-4, the following officers were elected for the ensuing year president, George Gray Ward, Jr, New York, vice presidents, Barton Hirst, Philadelphia, and Walter P Manton Detroit, secretary, Arthur H Curtis, Chicago, and treasurer, Brooke M Anspach, Philadelphia The next meeting of the society will be held in Washington, D C

The International Journal of Gastro-Enterology—The first number of this new periodical contains 120 pages It includes original contributions and a review on the roentgen-ray diagnosis of gastric diseases together with abstracts from the literature An innovation is the addition to each article of commentaries by other physicians to whom the editor submits the article previous to publication The publisher has utilized India tint paper as being more restful to the eyes

National Tuberculosis Association Conference—The five outstanding features of the seventh annual meeting of the National Tuberculosis Association, held recently in New York, were the reorganization to permit the expansion of the board of directors from 60 to 103, consisting of a representative director for each of the fifty-three state and affiliated associations and fifty directors at large, the stress laid on continued medical and social research, the emphasis on the problem of tuberculosis in children, the report of Mr Lee K Frankel of the Metropolitan Life Insurance Company, showing a decline of 39 per cent in deaths from tuberculosis in the registration area of the United States from 1900 to 1919, and the problem of the tuberculous ex-service man A number of resolutions were adopted One relating to medical education urged the establishment of special tuberculosis departments in medical schools The association commended the efforts of the national officials of the American Legion to have corrected the defects in legislation pertaining to rehabilitation of ex-service men and recommended, "first, such changes in the compensation act as will result in the immediate and material reduction in compensation for those cases that refuse to make proper use of the facilities provided for their benefit, and, second, by making the welfare of the men and of the country at large and not the desires of the individual constituents, the basis of action both as regards appointments of those charged with the care of these men and as regards the individual cases of the men themselves" Another resolution approved the principles involved in sheltered training and employment

for the tuberculous Recommendations regarding immigration and tuberculosis were given June 25 in THE JOURNAL and also the officers for the ensuing year A pageant entitled "The Spirit of the Double Barred Cross," written by members of the staff, was effectively staged at an evening meeting The association is making arrangements to print this pageant and make it available for presentation in large cities of the country

LATIN AMERICA

Public Health Nurses in Brazil—Brazilian journals are commenting very favorably on the introduction by Dr Chagas of public health nurses While their number is limited and their introduction comparatively recent, the results already shown from their work have impressed the public very favorably

New Hospital for Criminal Insane—A new hospital for insane criminals was inaugurated, April 28, at Rio de Janeiro The minister of the interior and justice attended as well as members of several bureaus and representatives of medical societies Prof Juliano Moreira, general director of the insane board of Rio, made the inaugural speech The new building is fireproof and is equipped with modern facilities

Personal—Dr Lyra Castro has been elected member of the Brazil legislature from the district of Para——Dr F Dominguez has retired after twenty-five years as professor of anatomy and operative medicine at Havana He was once dean of the School of Medicine which owes much to his activities He also introduced roentgen rays in Cuba and the roentgen-ray department at the Mercedes Hospital bears his name He is planning a temporary stay in France——Major A Gonçalves Moreira of the Brazilian army has been relieved as director of the military hospital of S Gabriel and appointed chief of the public health service of the Military School of Realengo——Major A Ribeiro do Couto has been appointed director of the Military Hospital of Recife

FOREIGN

Merger of Pavia and Milan Medical Schools—The *Riforma Medica* announces that the clinical institutes of Milan are to be merged henceforth in the medical school of the University of Pavia There are several postgraduate institutes in Milan, including the one for occupational diseases

Natality Congress—The third French Congres National de la Natalite is to convene at Bordeaux, September 22 The fee of 10 fancs does not entitle to the published transactions of the meeting This congress has been organized by the Bordeaux Chamber of Commerce Address Champ de Mars 8, Bordeaux

Prize for Research on Nervous System.—The Instituto Lombardo of Milan has awarded the Fossati prize to Professors Sala and Verga for their work, 'Lesions of Peripheral Nerves from Gunshot Wounds" The subject appointed for competition was the importance of war wounds in the progress realized in our knowledge of the nervous system

Memorial to Galeotti—Subscriptions are being collected for a bust of the late Prof G Galeotti whose death was recorded recently It is to be placed in the pathology institute at Naples, the scene of his long labors Dr F Pentimalli, now chief of the institute for general pathology, S Andrea della Dame 21, Naples, is in charge of the fund

Advertising of Medicinal Articles in Jugoslavia—The *Riforma Medica* quotes another Italian journal to the effect that according to a recent decree of the minister of public health in Jugoslavia, advertising of medicinal articles is restricted exclusively to medical journals Infringements of this rule entail a fine of 300 dinars for the first offense and revocation of the license in case of repetition

Personal—The cable states that Dr Alexis Carrel, of the Rockefeller Research Institute in New York, has been elected a national associate member of the French Academie de Medecine at Paris Dr Carrel is a native of France although residing in this country, but it is said to be the first time that any one residing outside of France has been admitted as a national associate The number is limited by the century-old charter to twenty The Academie can have only 150 members in all

New Edition of Italian Pharmacopeia—The *Riforma Medica* states that the fourth edition of the Italian official Pharmacopeia is now ready It is accompanied by a separate appendix containing the list of proprietary medicinal articles the inscription of which was authorized up to Dec 31, 1915 The price of the new edition is stated to be 20 liras, post free The appendix is sold separately for 3 liras Apply with money order to the Direzione dello Stabilimento penale delle Mantellate, Rome, which has charge of the sale

Health Insurance in Czechoslovakia—The *Riforma Medica* of Naples states that the government of Czechoslovakia has organized a system of insurance against disease, obligatory for all with incomes less than 20,000 crowns and optional above this The choice of the physician is unrestricted The government public health department is called the health and physical education service, its chief a member of the cabinet The five branches include medical and sanitary regulations, hospitals and mineral water health resorts, social pathology and child welfare, hygiene and physical training

Medical Bibliophiles—The *Vie Medicale* of Paris announces the organization there of a society with this name, presided over by Professor Roger, dean of the medical faculty The society purposes to publish some work each year illustrated by a master, the edition numbered and limited to the members of the society The annual fee of 200 francs entitles to possession of the volumes to be issued The initiation fee will be 200 francs except for the first fifty members These pay no initiation fee Those interested can obtain further details from Dr G Boye, 134 rue de Fontenay, Vincennes, Paris, France

Proposed International Sanatorium for Tuberculous Professors and Students—The *Nederlandsch Tijdschrift* relates that the students and faculties of the Swiss universities are soliciting funds for founding a sanatorium at Leysin for the benefit of tuberculous students and professors of any country Dr L Vautier is the initiator of the movement, as he has been taking sanatorium treatment himself in the Swiss mountains, and wants others to be cured as he was A fund of 1 000 000 francs is the aim sought, the Societe de Banque Suisse at Lausanne and the presidents of the Geneva, Lausanne and Neufchatel universities are receiving subscriptions for the purpose

Graduate Courses in France—Among the courses recently announced is one of twenty lessons to begin August 20, at the Hopital Laribosiere, by Drs Dufourmentel and Miegeville, chefs de clinique and their assistants, the course to be both technical and clinical This course is to be followed by one on surgery of the face and neck on the cadaver The laboratory fee is 150 francs Calot holds courses from time to time at the Orthopedic Institute at Berck The next one is a seven-day course to begin August 1, to train physicians in the orthopedics indispensable for the general practitioner, treatment of fractures, tuberculous bone and joint disease etc" The announcement states that explanations are made in English and Spanish The fee is 150 francs Address M Fouchet, Institut Calot, Berck-Plage, or the Clinique Calot, Quai d'Orsay 69, Paris

French Congress of Neurologists and Alienists—The twenty-fifth annual meeting of the organized neurologists and alienists of France and French-speaking countries is to be held at Luxembourg August 1 to 6 The presidents of the congress are Dr Buffet and Dr H Meige of Paris, and Prof J Lepine of Lyons is the vice president The main addresses are to be on the consciousness of the morbid condition in psychopathies by Logre of Paris, traumatic epilepsy, by Behague of Paris, and simulation of insanity, this address by Porot The official program lists a long number of excursions to points of medical interest, including the Institut Emile-Metz for professional orientation of workmen the Amar system, besides numerous social events the meeting concluding at Metz The fee is 30 francs and Dr Lalanne is treasurer His address is Asile d'Alienes de Mareville, pres Nancy

Organization of Antisyphilis Dispensary in a Maternity—The Maternite Baudelocque at Paris has for a year been conducting a consulting and treating dispensary for venereal diseases in connection with the obstetric work, and it has now been officially recognized and placed on the books of the Assistance Publique with a specialist in charge Couvelaire chief of the maternity, in announcing this news says that previously only in about 5 per cent of the syphilitic women was the syphilis suspected until after childbirth The aim of the new dispensary is to detect the syphilis in time for effectual treatment of the pregnant and parturient as well as of the offspring, and seek for syphilis in the father as well Women throng to this dispensary, he says, when they shrink from seeking treatment in a special antivenereal disease dispensary At the last sitting, eighty women and nineteen infants applied

Government Services

Antityphus Campaign

Surgeon-General Cumming of the U S Public Health Service has issued instructions for the extension of the campaign to prevent the importing of typhus from the infected areas of Central Europe At all the British and Continental ports through which the tide of emigrants flow Public Health Service officers have arranged with shipping companies for an inspection of all pasengers embarking for the United States

Additions to Soldiers' Homes

An expenditure of $3,100 000 out of the hospitalization fund of $18 600,000 authorized by Congress at the last session is to be spent in the construction of additions to five national soldiers' homes for the treatment of veterans of the world war The allotment was recommended by the Special Hospitalization Board, and has been approved by Secretary of the Treasury Mellon This is the second recommendation made by the board of physicians The projects include

(a) National Home for Disabled Soldiers Milwaukee erection of a new hospital to accommodate 500 tuberculosis patients
(b) National Home for Disabled Volunteer Soldiers, Dayton Ohio, for a new hospital to accommodate 250 tuberculosis patients
(c) Battle Mountain Sanatorium Hot Springs S D, for a new hospital to accommodate 100 tuberculosis patients
(d) Marion National Sanatorium Marion Ind for additional buildings to accommodate fifty patients with psychoses who have a complication of tuberculosis
(e) National Home for Disabled Volunteer Soldiers Leavenworth Kan for a new hospital to accommodate 200 tuberculosis patients

The Secretary of the Treasury in an announcement declared that practically none of the $18,600,000 appropriated would be used in the construction of new hospitals Through the Hospitalization Board, composed of Dr William C White Dr Frank Billings Dr John C Bowman and Dr George H Kirby, the information is evinced that by the adoption of a policy of enlarging existing institutions owned by the government instead of new construction, it is possible to provide 6,800 beds for the care and treatment of disabled war veterans which is an increase of 1 800 beds over the number anticipated when the appropriation was originally made by Congress Announcement of the expenditure of the remainder of the fund is expected to be made in the near future

Improving Quarantine Service at Staten Island

Officers of the U S Public Health Service recently examined the quarantine station at Rosebank Staten Island, and conferred with the medical officer in charge and the construction officer in regard to the proposed plan of improving the plant Congress appropriated $500 000 for its enlargement to accommodate the increased duties connected with this quarantine station It has been the property of the State of New York, but was recently taken over by the U S Public Health Service

Increase in Scope of Public Health Service

The growth of the U S Public Health Service since March, 1919, to May, 1921, since the Health Service began to provide hospitalization for former disabled war veterans has been extraordinary According to the official figures just issued, the number of hospitals have increased from twenty-two to sixty-two, and their capacity from 4 500 to 18,500 The number of patients grew much faster than the capacity of the government hospitals, jumping from 9 000 to 26 000 and the Health Service was forced to place about two-thirds of them in civilian hospitals under contract The personnel of the service has kept pace with the demands except the nurses, who are still about 20 per cent below quota The service now has a total of 3,200 physicians, 150 dentists, 1,400 nurses, 400 reconstruction aids and 125 dietitians

Hearings on Care of Veterans

The Senate committee appointed to investigate conditions in government hospitals caring for ex-service men is holding hearings at the Capitol Much testimony had been heard regarding the alleged inability of government physicians to diagnose cases properly Conditions at government hospitals in Perryville, Md, and the treatment of mental cases at an insane asylum in Phoenixville, Ariz, were attacked Charges of bureaucracy in Washington have also been frequently made at the hearings At Perryville it was alleged by witnesses that the hospital was located in a swamp, that sanitary conditions did not prevail, that medicine was supplied only on request of patients, and that the nervous and sell-shock patients were thrown into hysterics by the firing of heavy guns at Aberdeen At Fort Thomas, Ky, it was alleged that there was a force of seventy doctors, nurses and other government employees to take care of 104 patients At Phoenix, Ariz, it was alleged that insane patients were not isolated, but were brought into daily contact with insane criminals Senator Sutherland of West Virginia is chairman of the Investigating Committee

Training for Medical Officers

Orders to officers of the Medical Corps to take a course of instruction at the Medical Field Service School at Carlisle, Pa, have been issued by Surgeon-General Ireland of the Army The course runs for about six weeks The original plan was to include a number of the members of the Officers Medical Reserve Corps in the list, but this arrangement had to be abandoned because no appropriation was included in the Army appropriation bill for the last fiscal year Among the officers transferred from the Walter Reed Hospital in Washington are Captains Albert Bowen, John F Edwards, Sam Hardeman, William C Pollock, William D McLelland, Montreville A St Peter William K Turner and First Lieutenants Arthur D Haverstock and Joseph A. Mendelson

Improvements at National Leprosarium

The Department of the Treasury has awarded a contract for the construction of buildings and additions at the National Home of Lepers, Carville La The Leprosarium is owned and controlled by the government through the U S Public Health Service, having been given to the government by the State of Louisiana last year The expenditure for improvement amounts to $68 833 and calls for the erection of seven cottages and some minor construction work It will be started at once

Legislation for Walter Reed Hospital

Congressman Kahn chairman of the House Military Affairs Committee, has introduced into the House a bill providing for an appropriation of $136 000 to begin the work of developing the Walter Reed Hospital in Washington Another bill has been drawn up by Congressman Keller of Minnesota providing for the construction of a new hospital to replace the Walter Reed institution in the capital The proposed act plans for the sale of the present Walter Reed property and the purchase of a site in another part of the city The new hospital would be equipped to handle about 5 000 patients and would be constructed in such a manner that extensions can be made to it at a small cost

Navy to Enlarge San Diego Hospital

The construction of an enlarged hospital at San Diego, Calif at a total cost of $1 975 000, is planned by the Medical Department of the Navy The temporary hospital now located there is caring for more than 400 patients The medical authorities hope that their plans will be carried out for the construction of sufficient modern buildings to provide care for all the sick and injured operating in that vicinity with the destroyers, submarines, air stations and marine barracks, all a part of the naval establishment at San Diego The city of San Diego has donated additional land for the proposed new hospital

Reserve Officers Retained on Duty

Surgeon-General Ireland of the Medical Department of the Army has announced that of the forty-seven reserve officers of the Medical Corps now on active duty forty-three will remain in the service to take care of the war risk patients now being treated in army hospitals The Army appropriation bill failed to make any appropriation for the retention of reserve officers in the service except that it gave the Surgeon-General the authority to use them to care for disabled soldiers The forty-seven officers, therefore, on active duty would have been relieved but for this emergency clause on July 1, 1921 Four of them elected to withdraw from the service to engage in private practice The other forty-three were retained on duty

Foreign Letters

PARIS

(From Our Regular Correspondent)

June 10 1921

Transmission of Epidemic Encephalitis from the Mother to the Fetus

At one of the recent sessions of the Academy of Medicine, Dr R Mercier of Tours reported the interesting case of a primipara who was delivered at term of a living child twenty-two days after the onset of encephalitis, which had developed with myoclonia Childbirth appears to have acted as a traumatic shock and to have immediately aggravated the condition of the mother, for the woman died eighteen days after delivery of the child The second week after birth, the child presented a similar form of encephalitis but of a milder type which ended with recovery in spite of a complete lack of treatment According to Dr A Netter, encephalitis cases arising toward the end of pregnancy are not exceptional They are generally grave and entail the death of both mother and child It is to be noted however, that clinical observation alone does not allow us to affirm in an absolute manner placental transmission of encephalitis The immediate contact of an infant with its mother for a certain length of time is sufficient to permit contamination to take place through the bucconasal secretions or through the milk The hypothesis of placental transmission thus loses some of its support In this connection, it is interesting to note the researches carried out by Drs C Levaditi P Harvier and S Nicolau, the results of which were recently submitted to the Societe de biologie and which prove beyond all doubt that epidemic encephalitis in rabbits is transmitted from the mother to the offspring in utero by passing through the placenta which serves as a filter

Inquiry Concerning the Birth Rate in the Department of the Nord

Dr H Surmont has published recently in the *Echo medical du Nord* the results of inquiries made of physicians of the department of the Nord Judging from the 156 replies received, Surmont concludes that there is at present an appreciable improvement in the birth rate but this observation does not permit us to draw any conclusions in regard to the future The pathologic causes for the lowering of the birth rate (syphilis, alcoholism tuberculosis gonorrhea) are still present in full force The practice of abortion and birth control is still playing havoc The fight against these plagues and for the increase of the birth rate must therefore be continued energetically

The City of Paris and the New University City

The municipal council is considering the plan of transferring from the City of Paris to the University of Paris 9 hectares (22½ acres) of ground near Montsouris Park for the erection of the new university city This project received its first impetus from a donation of 10 000 000 francs made by Mr Deutsch (de la Muerthe) The price of the site has been fixed at 13 500 000 francs, and it has been agreed that the plans for laying out the new university grounds shall be made in accordance with a common understanding between the City of Paris and the University of Paris

Death of Dr Charles Porak

Dr Charles-Auguste Porak died recently after a long illness, at the age of 76 Porak was born in Paris in 1845 and after a brilliant record as a medical student he was appointed in 1882 obstetric surgeon to the Paris hospitals He became chief of service at the Saint-Louis Hospital and later occupied a similar post at the Lariboisiere Hospital Just before his retirement he was chief obstetric surgeon at the Maternite Hospital He was president of the Obstetric Society of France and of the Society for the Protection of Children He published a number of works, which deal chiefly with infections of the umbilicus in the new-born, congenital dystrophia of the bones, and the passage of drugs and poisons through the placenta He had been a member of the Academy of Medicine since 1894

Poisoning by Rhubarb Leaves

In certain parts of France it is a common practice to cook rhubarb leaves and to eat them in place of spinach This custom is not entirely devoid of danger, and the *Bulletin des sciences pharmacologiques* mentions several serious cases of poisoning by rhubarb leaves The symptoms of poisoning manifest themselves within a few hours after the meal, and are marked by pains in the stomach with a burning sensation, vomiting sanguinolent diarrhea and passage of cloudy urine of mahogany color The urine contains albumin in large quantities numerous epithelial cells, red blood cells etc Several similar cases, one of which ended fatally, have been reported in Switzerland It is probable that the poisonous effect is due to soluble oxalates contained in the leaves and stems of certain species of rhubarb It would be interesting in this connection to determine what varieties and species of the plant what soils and what other external conditions play a part in the poisoning

LONDON

(From Our Regular Correspondent)

June 6, 1921

Heliotherapy

In a letter to the *Times*, Mr Leonard Hill points out the superior therapeutic value of the sun's rays to those of artificial light and gives a new and interesting explanation of it He first refers to experiments made by Dr Sonne, of the Finsen Light Institute, who compared sunlight with sources of dark heat, each kind of radiation being taken of the same energy value per unit of surface After deducting the amount of each kind of radiation reflected by the skin surface he has found that thrice as much sunlight as dark heat is required to burn the skin The difference is due to the fact that the visible rays of the sun penetrate the skin and are absorbed by the blood circulating in the deep and subcutaneous tissue, while the dark heat is mostly absorbed by the skin surface and warms Dr Sonne has found that sunlight may warm up the blood under the skin no less than 5 degrees Centigrade above the temperature to which dark heat warms it, that is, when the surface of the skin in either case is heated to a just endurable degree The visible rays absorbed by the blood are converted into heat, and the heat carried away by the circulation warms up the body Exposed to the cooling breezes of open air the body is kept cool as a whole, while locally the blood and deep skin in exposed parts are warmed by the sun to a temperature which may even exceed that of high fever Mr Hill thinks that this local warming, not excluding other possible results of absorption by the blood of the sun's visible rays, has a profound effect on the immunity of the body to disease Children with tuberculosis of the bones, joints, glands and skin respond well to conservative treatment in sanatoriums in which they are exposed to open air and sunlight It is the visible not the ultraviolet rays that stimulate health, for the latter are absorbed by the surface layer of the scarf skin, having the least penetrative power To protect against overdoses of the visible rays the skin becomes pigmented, and experience shows that it is those who pigment deeply who do best The red-haired, fair-skinned children who do not pigment cannot secure the benefits of sun exposure The dark heat that we secure from stoves, steam pipes and hot water is a sorry substitute for sunshine In place of dark heat and a

stagnant, warm atmosphere we want luminous scources of heat which will warm the blood as the sunshine does, and cool, moving air, which stimulates the metabolism of the body and the defensive mechanism of the respiratory membrane against catarrhal infections To get luminous sources of heat we must use smokeless fuel and keep the sky clean, so that we can enjoy all the possible sunlight Enormous economic effect would follow the national use of coal not as fuel, but as raw material for the manufacture of smokeless fuels, solid, liquid and gaseous A great increase of health would no less result from clear skies, increased sunlight and absence of fog, from skin and lungs, clothes, house decorations, and gardens no longer damaged by soot

"Dangerous Drugs Regulations"

In a previous letter (THE JOURNAL, March 12, 1921, p 738) the protest of the British Medical Association against these proposed regulations, which are designed to check the drug habit, was reported Not only the association but also a number of other bodies medical, pharmaceutical, etc., raised objections The government appointed a committee to amend the regulations, and it has met most of the objections The drugs to which the regulations apply are morphin, cocain, ecgonin and diamorphin (heroin) and their respective salts, medicinal opium and any preparation, admixture, extract or other substance containing not less than 0.2 per cent of morphin or 0 1 per cent of cocain, ecgonin or diamorphin Their manufacture, sale, distribution and possession are to be completely controlled as no person other than those licensed will be permitted to take part in any of these These drugs can be supplied to be public only on a prescription given in writing by a registered physician, dentist or veterinary surgeon, which must be dated and specify the name and address of the person for whose use the prescription is given and the total amount of the drug to be supplied The government may prescribe and issue a form for use in prescribing these drugs, on which alone they can be prescribed A prescription for any of the drugs on such an official form shall be dispensed only if the dispenser is acquainted with the signature of the physician, or the person for whose use the prescription is given, and has no reason to suppose that the prescription is not genuine The drugs must not be supplied more than once on the same prescription, unless the prescription so directs, and then they may be supplied on not more than three occasions Every person who supplies any of the drugs must enter in a register kept for the sole purpose all purchases and sales A physician who records in a day book particulars of drugs supplied by him to patients with their names and addresses may, in lieu of keeping the register, enter separately for each of the drugs in a book kept for the purpose references under the appropriate dates to the records in the day book Certain familiar remedies, such as opium plaster and ammoniated liniment of opium, containing the drugs mentioned are exempt from the regulations, as they are not likely to conduce to the drug habit

The Decline of Fever Mortality

In his Chadwick lecture on fever in England during the past century, delivered at the Medical Society of London lecture room, Dr William Hunter dealt with the remarkable results achieved by sanitary reform since the passing of the first public health act in 1848 If the rate per million of mortality of fevers existing in England and Wales in the four years 1847-1850 existed now, the total deaths from fevers in the years 1916-1919 would have been 600,000, whereas they were only 81,000 Of these, 19,000 were caused by diphtheria, 52,000 by measles and whooping cough, about 5,000 by scarlet fever, only 3,600 by typhoid, 110 by smallpox, and only seven by typhus The chief problems regarding fever mortality in England at the present time were those connected with diphtheria, measles and whooping cough, which were responsible for nine tenths of the number Of deaths from the other fevers, the number in 1919 was the lowest in the history of England, namely, only 12,000 in a population of 34,000,000, as compared with 108,000 in 1849 in a population of 17,000,000

A Nursing Hotel

It is announced that a nursing hotel, which may be described as a nursing home *de luxe*, will soon be established in London It will dispel the gloomy atmosphere which so frequently pervades the ordinary nursing home There will be no gray walls, no obstruction of uniformed nurses A gorgeously attired hall porter will usher the guest-patient into a wondrous lounge amid flowers and palms, where on luxurious settees he (or she) will await examination by specialists He will lunch socially with other newcomers, and at length each will adjourn to a special suite of rooms, each of which has its private bathroom Special color schemes will be a feature of the mural decorations Expert cooks will provide such special diet as each guest-patient is prescribed

BELGIUM

(From Our Regular Correspondent)

Liege, June 1, 1921

Sterilization of Typhoid Carriers

The Royal Academy of Medicine has received from Dr Haibe an important communication relative to the typhoid bacillus for the best report on which a prize has been offered Haibe has studied in animals the conditions under which the typhoid bacillus is carried to the bile when introduced directly into the circulation He has noted, especially, that in the dog bacilli are found in small quantities in the bile forty minutes after intravenous injection of a heavy dose of a bacillary suspension On the other hand, negative results are obtained if the typhoid bacillus is injected into the dog's stomach It is an established fact that in carriers the contamination of the digestive tract is usually caused by the ejection of the bile, that is to say, the bile is a center of culture where the bacterial organisms can multiply and be preserved But Haibe raises the question whether the bacillus could not sometimes maintain itself in the tissues of the intestine under the influence of inflammatory changes, especially in cases of appendicitis He mentions the case of a person who suffered an attack of appendicitis eight months after having had typhoid fever The appendix, when removed, yielded a culture of typhoid bacilli Was it really a case of appendicitis of typhoid character, as the author seems to believe? This does not seem to be irrefutably proved, as it is not certain that this patient did not harbor typhoid bacilli in the gallbladder In the second part of his report, Haibe studies the influence of a series of drugs given to dogs for the purpose of ridding them of the bacteria present in the bile ducts These experiments, dealing mainly with colloidal silver, neo-arsphenamin and hexamethylenamin, have unfortunately not been markedly successful Even autogenous vaccines were ineffective, however, they seemed to exert a favorable influence on the urinary elimination of bacilli It would be interesting to follow up the study of this particular point Haibe has carefully studied 351 cases of typhoid fever from the standpoint of the persistence of bacilli in stools Bacilli have been found in 6 per cent of the cases after seven weeks, and in 2 3 per cent of the cases after three months The chronic carriers were subjected to various forms of treatment As a general rule, autogenous vaccines did not prove efficacious Arsenical preparations did not show any results Haibe believes that a rather strict dietetic regimen should be recommended, preferably a regimen with milk as a basis Frequent purging doses of calomel seemed to be useful However, no particular noteworthy results were secured

Furthermore, Haibe recounts in minute detail his observations in a case of cholecystitis The patient (a woman) was a carrier on whom autogenous vaccines, purges, etc, had no effect in dispelling bacilli Cholecystectomy, however, gave decisive results The bacilli soon disappeared definitively This is easily understood, as the bile taken from the hepatic duct is sterile The bacillus is found in the gallbladder These facts clearly show all the difficulties pertaining to the problem of the sterilization of bacillus carriers

Migraine

Before the Societe clinique des hopitaux, Monsieur Bouche presented a new conception of the pathogenesis of migraine arrived at through researches made in collaboration with Monsieur Hustin He applies the term "vasotrophic shock" to the vessel and blood changes observed after injection of small doses of horse serum antigen This name seems to him to be more exact than the customary term "anaphylactic shock," because the symptoms noted occur in an identical manner under conditions in which anaphylaxis does not intervene During the first half hour following the injection, the effects may be attributed to the excitation of the sympathetic nerve (leukopenia in the capillaries with leukocytosis in the veins, variation of the refractometric index, etc) Five or six hours later, a second period is produced by the excitation of the autonomic nervous system (general leukocytosis, mononucleosis, etc) The authors, who had previously found this symptomatology in epilepsy, found the same manifestations in migraine, in which they were able to secure graphs showing the refractometric index and the duration of coagulation typical of vasotrophic shock But whereas in epilepsy the attack occurs during the second phase, in migraine it indicates the final phase

The American Commission for Relief in Belgium and the Rockefeller Foundation

The Fondation universitaire, founded through the generosity of the American Commission for Relief in Belgium, and endowed solely with civil rights and privileges, has just ended its first period of activity It has already proved its usefulness through the many welfare movements that it has supported, which is particularly appreciated at this time when the intellectuals, both scientists and students, are striving to overcome the difficulties caused by the high cost of living It has granted stipends to more than 300 students of our high schools and universities It has accorded fellowships to twenty-four students desiring to study in the United States It has subsidized the publication of reviews and books, and has assumed the total expense for the publication of a series of scientific works, and through this action will help those who are prevented from publishing their works on account of the increased cost of printing This foundation is also establishing scholarships for our students in European universities

Colonial Hygiene

In an interesting book published by Dr Devalkeneer, entitled "Coloniser pour vivre—Vivre pour coloniser' and which he dedicates to those who are interested in the Belgian Congo, he emphasizes the two most important factors pertaining to hygiene the health of the colonists and the amelioration of the black race His remarks on this subject are worthy of attention "The aim in view would not be reached," says the author to the colonists, 'if the knowledge of hygiene that you are to acquire should not prove to be of some benefit to the people among whom you are residing, for it must be remembered that these negroes gave heroic proofs of their love for the mother country during the war and thus earned the right of our protection The black race is the wealth of our colony, and we should strengthen its representatives morally and physically That is the reason why, when we shall study the social scourge called trypanosomiasis, your attention will be especially directed to the measures to be taken to overcome it"

Demonstration in Honor of Prof Léon Stiénon

After having devoted more than thirty years to teaching in universities, Professor Stienon has resigned his chair in the department of pathologic anatomy of the University of Brussels The professor who has initiated so many generations in the study of this difficult subject, which is such an essential branch of pathology, takes leave of his pupils while his vitality is at its highest and his zeal for his work is keenest The Cercle de medecine et de pharmacie of the University of Brussels, wishing to pay homage to the eminent professor, proposes to present to him a medallion executed by one of our best sculptors and to create an endowment in his memory which shall recall to future generations the distinguished services rendered by Profsesor Stieon to the University of Brussels and to medical science in general

BUENOS AIRES

(From Our Regular Correspondent)

May 27, 1921

Argentine Medical Association

To the societies of biology, surgery and internal medicine that constituted this association originally there have been added others on ophthalmology, deontology, roentgenology, electrotherapy, hygiene and microbiology However, there still remain some independent societies which have not joined the association, such as those of pediatrics, surgery, obstetrics and gynecology The last two have a fixed membership and require the presentation of a thesis The present tendency is to bring about the confederation of all societies located in the federal capital On the other hand, the medical society of La Plata and those in other cities are taking steps to band together Each society will preserve its independence and have control over its own funds, and may establish any relations it pleases with similar foreign associations

For the first time the new society of deontology has undertaken a propaganda campaign in professional matters It has asked the revocation of licenses granted by the Department of the Interior for the sale of several drugs, in spite of the fact that the technical governmental bureaus had shown that they are either inactive or harmful and lack any possible therapeutic action There has been some talk, although it has not materialized as yet, of establishing an institution somewhat similar to the Council on Pharmacy and Chemistry, which has given such wonderful results to the American Medical Association

Medical Congresses

During the present year there will be held a congress on internal medicine organized by the Argentine Medical Association Next year there will be held the Second National Medical Congress, having for its subject hydatid disease

Dr Molina's Retirement

Dr Samuel Molina has just given up his position as chief of Rivadavia Hospital, which he filled for forty-eight years At the end of last year he also retired from the chair of clinical obstetrics Dr Molina was truly the creator of modern obstetrics in our country, the Rivadavia Hospital, devoted only to women is one of the best of Buenos Aires

Medical Teaching Conditions in the Schools of Medicine Continue Abnormal

At the recently established school at Rosario they are having a strike The school at La Plata is still organizing

its second year course, although we are now at the middle of the school year At present the students at Cordoba and Rosario have the power to appoint or dismiss professors, etc, and of course they "passed" the examinations At these schools there is an antireligious tendency, and socialist and anarchist propaganda is active So far Buenos Aires University is the only one that has escaped similar conflicts derived from the right enjoyed by students to intervene in the election of deans and boards of directors The professors have ceased to take part in the elections, for should their opinion prevail the students would start disturbances

MADRID

(From Our Regular Correspondent)

May 12, 1921

Hazen's Theorem Applied to a Spanish Town

The truth of Hazen's theorem is well illustrated at the town of Vendrell in the province of Tarragona Aug 31, 1911, seventy people suddenly became sick of cholera, this number kept on increasing until it reached a total of 600 out of 4 700 inhabitants The water supply was derived from two little streams and was exposed for a distance of 500 meters The neighbors availed themselves of this opportunity to wash their clothes in the streams So the very day before the catastrophe, some housewives washed there the underwear of a patient with diarrhea who, as found afterward, had been in contact with the crew of an Italian ship from a cholera-infected port As soon as the epidemic was over, Dr Murillo himself, who had charge of its suppression, decided to round up his work, endowing the city with a safe water supply The work was ended in 1912 so that, if we leave aside that year and the one of the epidemic, we have seven years with a protected water supply (1913-1919) to compare with the seven previous ones, when the water was not protected The death rate in the previous period was 94 and in the last period 75, a saving of nineteen lives every year A curious fact, hard to explain, is that the deaths from brain hemorrhage, which is a common cause of death in this region, show a decrease from 32 2 per thousand in the first period to 17 7 afterward, a reduction of 45 per cent This shows that many lives would be saved in Spain if public health measures were thoroughly enforced, but in this country only Coruña and Valencia have comparatively sanitary water supplies, and the other cities, such as Orense, Ciudad Real and Cadiz, which have low death rates, must thank fate for it

Typhoid in Spain

Dr Murillo, general inspector of the Spanish Sanitary Service, delivered at the National Academy of Medicine a lecture which made such a deep impression that the academy ordered its publication in a large edition to be distributed all over the country In fact, it is a splendid sanitary lesson pointing out public health deficiencies in Spain, especially as regards municipal authorities At the same time it overflows with medical optimism, since it lays stress on the sense of public duty among the medical profession, which is the only group in Spain which concerns itself with the lives of the people, and the only one which through a constant campaign has popularized sanitary improvements The death rate decrease from 35 to 22 per thousand since 1900 is wholly due in Spain to the medical profession, which has saved 144,000 lives in this period

In Spain, 5 000 people die every year of typhoid fever, which implies 50,000 typhoid cases If we keep in mind that each gram of typhoid excreta holds an average of a hundred million bacilli, we gain a better idea of the enormity of this infection The vast majority of typhoid patients cease to be carriers three months after recovering from the disease, but some remain carriers for an indefinite period Dr Murillo reported an investigation he has carried out since 1917 to determine the survival of the typhoid bacillus left unmolested, i e, in ground free from organic matter, sand sterilized up to 100 C and kept in a damp environment He found that under such conditions the germ survives fifty-five days Afterward he carried out two experiments in a radish field in the open, first inoculating the ground with bacilli before planting the radishes and then introducing them just after the radishes began sprouting In the first case the bacillus remained virulent during thirty-six days, and in the second, thirty days As to the way in which the bacilli reach the ground he said that everybody was familiar with the preparation of manure in Spain There are no privies in most villages, and the whole family uses the stable to mix their stools with those of the animals This is done not only by habit but also out of greed to enrich the fertilizer Naturally, if there are any typhoid patients in the family there will be legions of bacilli which will be spread in orchards and gardens A precisely similar situation compelled the German commission against typhoid fever to devote a good share of the 12 000,000 marks it had available, to build 56,000 privies and 51,000 manure bins The same German commission traced 10,000 patients and found out the source of the infection in over 5 500 Four thousand were contact cases, while the others had been infected through other agents such as water, milk, food and excreta This does not mean that water has lost its epidemiologic importance, especially in Spain, but that we should never neglect to study direct infection Water-borne epidemics are massed infections, contact cases spread like oil spots, a water-borne infection is like lightning, and a direct infection like a short circuit

WATER-BORNE TYPHOID OUTBREAKS IN SPAIN

There have been many instances of water-borne typhoid epidemics in Spain One of them occurred at Madrid last year and was characterized by a sequence of outbreaks and its long duration In January, 1920, there were sixty-two typhoid deaths, and in February, March and April, twenty-eight, thirty-seven and fifty-one, respectively There were forty-one deaths in August, and then in the fall an explosive outbreak localized in one borough Spain is far below other countries as regards water-borne infection In the decade 1910 to 1919, the typhoid death rate varied between 22 to 35 per hundred thousand inhabitants The average was 28 per hundred thousand, the only redeeming feature being that in the previous decade it had been 37 per hundred thousand The best proof that municipal authorities do neglect public health is shown in the fact that in all the provinces the typhoid death rate is higher in the capital cities than in the rest of the province This is the very opposite of what happens in all other countries Among capital cities, of the two largest cities of Spain, Barcelona and Madrid, Madrid has a minimum typhoid death rate of 20 and a maximum of 43 per hundred thousand Barcelona's lowest typhoid death rate is 39, and its highest, 308, having in other years of the same decade figures of 115, 152, 171 per hundred thousand This is much higher than Moscow's death rate of 56 and Petrograd's, 126 Among the cities with highest typhoid mortality in the triennium 1917 to 1919 were Almeria, which had 530 per hundred thousand, Tarragona, 243, Zaragoza, 243, and Barcelona, 211

Child Welfare and the Protection of Mothers

Professor Bar of Paris delivered before the National Academy of Medicine a lecture describing the work accomplished in Paris to protect babies and their mothers He referred to the recent mothers' centers which are somewhat like the *Gotas de leche* established in Madrid through the late Dr Ulecia's efforts In these centers, mothers are advised as to

the bearing and rearing of children Milk is furnished if needed, and the children are inspected when they are still well without waiting until they get sick Infant mortality in France, according to Professor Bar, is 9 per cent , but in places where these consultories have been established, it has decreased to 4 5 per cent

He referred to the present status of obstetrics in France He said that cesarean section is very much in favor before labor Preventive obstetrics is the watchword of the times, this being due to the consultories for healthy pregnant women, established through Professor Bar's efforts In 1920 he saw in his consultory for normal pregnant women 17,000 patients, who were advised as to the best measures to bring about an ideal labor Evolution of obstetrics is clearly shown in the subjoined table, in which is also given the name of the professor in charge of the service and the year

	1897 Tarnier	1905 Budin	1917 Bar
Number of labor cases	2 307	1 625	2 233
Shoulder presentation	25	20	8
Embryotomies	8	4	4
Head presentation	1	5	4
Cesarean section	1	5	19
Induced labor	4	4	0
Placenta praevia	8	4	4
Eclampsia	17	10	3

In the research work done in his clinic no signs were found of Widal's hemoclastic shock in normal young pregnant women during the first five months of pregnancy, and only one third exhibited it in the last three months The doctrine of a liver toxemia is losing ground The latest investigations have shown that the chorionic villi are always at work The syncytium is a glandular organ which acts as an antigen, and while no antibodies have ever been found after the first five months, their existence may be accepted in the early part of pregnancy Abderhalden's test has proved positive in one third of nonpregnant women The villi do not act directly but through the endocrine glands, there being during pregnancy an increase of cells in the anterior lobe of the pituitary gland so typical as to gain for them the designation of pregnancy cells There are also changes in the thyroid gland, the ovary and the suprarenals In these there is at first an increase of cholesterol, and the medullary substance becomes enormously enlarged, thus causing an increase of the chromaffin substance The placenta acts on the uterus through the ovary, not directly but through the endocrine glands Hence the influence of these glands on pregnancy

Marriages

IRWIN B MARCH, Major, M C, U S Army Richmond, Calif, to Miss Elizabeth Louise Stevenson, in Manila, P I, May 6

JOHN HARPER, Lieut, Commander M C, U S Navy, to Miss Henrietta Elizabeth Berens, at Washington, June 2

FRANCIS A O'REILLY, Lawrence, Mass, to Miss Mary M Haverstraw of Providence, R I, at Lawrence, June 22

WALTER CUNNINGHAM OVERSTREET to Miss Josephine Hedwig Thomas, both of Jonesboro, Ark, June 24

THOMAS DONALD CUNNINGHAM to Miss Isabel Coolidge Radcliffe, both of Boston June 21

ARTHUR O BRUCE, Boston, to Miss Marion Patrician of Somerville, Mass, June 14

EARL E VANDERWERKER to Miss Emily H Langmann, both of New York City, June 25

EMOR L CARTWRIGHT to Miss Leota F Anspach, both of Fort Wayne, Ind June 1

JACOB J ENTZ, Marion, Kan, to Mrs Virginia Knox Kimble of Wichita, Kan., May 5

Deaths

Wallace Calvin Abbott ⊕ Chicago, University of Michigan 1885, died at his home, July 4, aged 64, from chronic nephritis He was a graduate of Dartmouth College Following his graduation in medicine he engaged in general practice but shortly began the manufacturing of alkaloidal granules later forming the Abbott Alkaloidal Company This concern developed into a general pharmaceutical manufacturing company now known as the Abbott Laboratories Dr Abbott founded the *Alkaloidal Clinic* devoted to the publication of material relative to alkaloidal therapy and now published as the *American Journal of Clinical Medicine* He was also the author of several books on the practice of medicine with alkaloidal products

William T Jenkins, New York, University of Virginia, 1879 health officer of the port of New York at the time of the cholera epidemic, in 1892, established, in 1892, the system of sanitary inspection of immigrants at the ports of embarkation and was an incorporator and director of the merchant marine hospital service for foreign sailors, appointed health commissioner of the city of New York in 1898, and while holding this position was appointed a member of the state board of health by Theodore Roosevelt then governor of New York State, died in the Hahnemann Hospital of liver trouble, June 25, aged 66

Richard Kalish ⊕ New York, Bellevue Hospital Medical College, N Y, 1884, a fellow of the American College of Surgeons, member of the New York Academy of Medicine president Society of Alumni of Bellevue Hospital, 1889-90, consulting ophthalmologist to the Knickerbocker, City, Sea View St John's and Long Island City hospitals, died, June 21 from heart disease aged 67

Seth C Gordon, Portland, Me , Medical School of Maine, Portland, 1855, LL D, Dartmouth Medical School Hanover, 1905, Fourth vice president of the A M A 1883, Civil War veteran, member of Democratic National Committee for Maine 1896-1900, surgeon at the Maine General Hospital, 1874-1894, specialized in gynecology, died, June 23, aged 91

Eugene Bernard Laird, Haverstraw, N Y , College of Physicians and Surgeons, Columbia University, New York, 1877, consultant surgeon at New York State Hospital for Crippled and Deformed Children, West Haverstraw, member of the Medical Society of the State of New York, died June 24, aged 65

Sarah Elizabeth Finch ⊕ Sound Beach, Conn , Cornell University Medical College, Ithaca and New York, 1904, for several years bacteriologist of the New York Skin and Cancer Hospital, died from heart disease following an operation at the Lenox Hill Hospital New York, June 21, aged 40

George D McGauran ⊕ Newburyport Mass , Laval University, Quebec, New York University Medical College 1892, city physician of Newburyport and consultant medical staff, Anna Jacques Hospital, died, June 15, from hardening of the liver following severe gallstone trouble, aged 71

Allen Lamson, Worcester, Mass , New York Homeopathic Medical College 1883, at one time a surgeon on the staff of the Worcester Hahnemann Hospital, seized with heart attack while attending the centennial of Amhurst College, and died June 22, at the college hospital, aged 66

Maurice Edgar Rose, Albany, N Y , Columbia University College of Physicians and Surgeons N Y, 1907, director of child hygiene New York State Department of Health, died suddenly from angina pectoris at his office in the Capitol building June 22, aged 37

W W Culpepper, Crowley, La , New Orleans School of Medicine, 1870, died in June from injuries suffered in an accident, June 15 in Port Arthur, when a motor cycle in which he was riding was wrecked by two automobiles, aged 86

Eugene B Dunbar, Manchester, N H , Dartmouth Medical School, Hanover, N H, 1887, member New Hampshire Medical Society, died June 19 in the local hospital, where formerly he had been a member of the staff, aged 64

Louis A Grimes ⊕ Concord Ky , Starling Medical College, Columbus Ohio 1863, Jefferson Medical College, Philadelphia, 1864, local surgeon, Chesapeake and Ohio Railroad, died, June 20, after a brief illness aged 82

Louis J Bechtold, Belleville, Ill St Louis Medical College 1871, a practitioner in Belleville for nearly half a cen-

⊕ Indicates Fellow of the American Medical Association

tury, member of Illinois State Medical Society, died, June 17, from angina pectoris, aged 73

James H Owen, Randolph, Ky , Louisville Medical College, 1876, member of the Kentucky State Medical Association, died, June 16, at Summer Shade, Ky, from organic heart lesion, aged 71

Charles Teuber, Moorbark, Calif , College of Physicians and Surgeons New York, 1877, University of the City of New York, 1885, died in Oxnard, Calif, June 9, aged 65

Robert E Conniff ⊕ Sioux City, Iowa, State University of Iowa College of Medicine, Iowa City, Iowa, 1884, died, June 20, from a complication of diseases, aged 63

Lawrence Contessa ⊕ New York, Long Island College Hospital, Brooklyn, 1909, member of staff at the Sydenham Hospital, New York, died, June 21, aged 38

Ralph G Smith, Oakland, Iowa, Queen's University, Kingston, Ontario, 1893, member Iowa State Medical Society, died, June 23, from pneumonia, aged 55

Robert B Combs, College Hill, Ky , Hospital College of Medicine, Louisville, 1889, member Kentucky State Medical Association, died June 9, aged 70

Lotan Chilson Read, Grand Rapids Mich , Cincinnati College of Medicine and Surgery, 1884, Civil War veteran, died suddenly, June 19, aged 76

William B Daniel ⊕ Disputanta, Va , Medical College of Virginia, Richmond, 1863, a Confederate veteran, died at Richmond, June 12, aged 81

John W House ⊕ Indianapolis, Miami Medical College, Cincinnati, 1886, died at the Methodist Hospital following an operation, June 21, aged 62

John S Inks, Nappanee, Ind , College of Physicians and Surgeons, Chicago, 1889, died at Wakarusa, Ind, June 16, from bronchitis, aged 73

George B Garrison, Pearl, Ill , American Medical College, St Louis, 1877, a practitioner of Pearl for forty-five years, died, June 15, aged 83

Henry J Laciar ⊕ Bethlehem, Pa , College of Physicians and Surgeons, Baltimore, 1881, died, June 13, from cerebral hemorrhage, aged 65

John Miles Caldwell ⊕ Bemidji, Minn , Trinity Medical College, Toronto, Canada, 1899, died at Wimbledon, N D, June 14, aged 48

Walter Hitchcock, Norwalk, Conn , College of Physicians and Surgeons, New York, 1883, died, June 21, after a brief illness, aged 65

Andrew J Terrill, Collinsville, Okla , St Louis College of Physicians and Surgeons, 1907, died, June 4, from heart lesion, aged 42

Samuel N A Downing, Salt Lake City, Denver College of Medicine, 1884, died, June 19, from cerebral hemorrhage, aged 63

B Roswell Hubbard, Los Angeles, Eclectic Medical Institute, Cincinnati, 1879, died, after a lingering illness, June 11, aged 68

William Calhoun Ebaugh, Granville, Ohio, Jefferson Medical College, 1867, died, June 11, from cerebral hemorrhage, aged 82

Edward W Bittner, Wheatland Iowa, University of Iowa, 1907, died in Cedar Rapids, Iowa, June 18, of embolism, aged 37

Daniel E Roberts ⊕ Keyport, N J , University of the City of New York 1883, died at Holmdel, N J , June 15, aged 60

Joshua D Janney, Riverton, N J , Starling Medical College, Columbus, Ohio, 1865, died, June 15, aged 90

Robert Wesley Johnson, Assumption, Ill , Eclectic Medical Institute, Cincinnati, 1872, died, June 17, aged 71

Robert Mosser ⊕ Phoenix, Ariz , College of Physicians and Surgeons, Chicago, 1908, died, June 24, aged 52

Leo Karlinsky ⊕ Baltimore, University of Maryland, Baltimore, 1906, died suddenly, June 13, aged 36

George Creswell, Glenrock, Wyo , Rush Medical College, Chicago, 1897, died in June, aged 50

Herbert T Risdon, Berkeley, Calif University of Vermont, 1879, died, June 15, aged 66

Correction—The report of the death of DR W T JOHNSON in THE JOURNAL, June 18, was an error We are informed by Dr Johnson that the report should concern the death of his wife The information received by THE JOURNAL was contained in press clippings from two newspapers in towns near Eldorado, Ill, in which Dr Johnson resides

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY TOGETHER *WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE*

MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

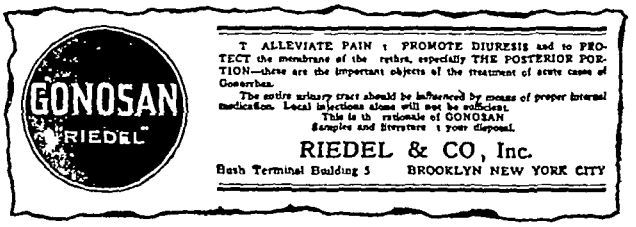
Gonosan—A quantity of this product, alleged to have been shipped by Riedel & Co, Inc, New York City, to San Juan, P R, in July, 1919, was declared misbranded by the federal authorities The Bureau of Chemistry reported that analysis showed Gonosan to consist essentially of oil of sandalwood The following statements regarding the alleged curative or therapeutic effects appeared in a Spanish circular in the trade package

Gonosan the best of balsams in gonorrheal therapeutics

Makes the acute scalding pains and violent erections disappear likewise those manifestations which are accustomed to show themselves in acute gonorrhea'

in those cases in which inflammation of the bladder is added to them Gonosan rapidly calms the nerves of same and makes dysuria disappear

These claims were declared false and fraudulent "as the article contained no ingredient or combination of ingredients capable of producing the effects claimed" In August, 1920,



Riedel & Co, New York City, claimant, having consented to a decree without denying the allegations of the libel, judgment of condemnation and forfeiture was entered and the court ordered that the product be released to the claimant on payment of the costs and the execution of bonds in the aggregate sum of $750—[*Notice of Judgment No 8661, issued April 28, 1921*]

[The Council on Pharmacy and Chemistry published a report on Gonosan, declaring it inadmissible to New and Nonofficial Remedies, in THE JOURNAL, Oct 13, 1917]

C C Capsules—The Evans Drug Mfg Co, Greensburg, Pa, shipped a quantity of this product in November, 1918 Analysis of a sample by the Bureau of Chemistry showed that the contents of the capsules consisted of a mixture of copaiba balsam and cubebs The following claims appeared on or in the trade package

A speedy relief for diseases peculiar to the kidney, bladder and urinary organs, especially gonorrhea cystitis and gleet '

These statements were declared false and fraudulent in that the preparation "contained no ingredients or combination of ingredients capable of producing the therapeutic effects claimed" In September, 1919, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[*Notice of Judgment No 8601, issued April 26, 1921*]

C G Remedy—A shipment of this product, alleged to have been made by the Allan-Pfeiffer Chemical Co, St Louis, Mo, in February, 1919, was declared misbranded by the federal authorities The Bureau of Chemistry reported that the product was essentially a solution of zinc salts, boric acid, eucalyptol, phenol (carbolic acid) and glycerin and an unidentified plant extractive It was falsely and fraudulently recommended as a cure and preventive of gonorrhea, blenor-

rhea, leucorrhea and "Allied Forms of Acute and Chronic Inflammatory Mucous Discharges from the Urethra" In September, 1920, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[*Notice of Judgment No 8655, issued April 28, 1921*]

Pulmo Oil Compound Emulsion for the Lungs—This product, alleged to have been shipped by the Callahan Chemical Co, Inc, New Orleans, La, in January, 1920, was declared misbranded Analysis of a sample by the Bureau of Chemistry showed it to consist essentially of sperm oil containing a small amount of methyl salicylate and alcohol It was falsely and fraudulently recommended as a valuable remedy for tuberculosis and all pulmonary affections In July, 1920, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[*Notice of Judgment No 8664, issued April 28, 1921*]

A W Chase's Nerve Pills—A quantity of this product, alleged to have been shipped by the Dr A W Chase Medicine Co, Buffalo, N Y, in June, 1920, was declared misbranded The Bureau of Chemistry reported that analysis showed the pills to consist essentially of aloes, iron (ferrous) carbonate, arsenic, manganese and strychnin It was falsely and fraudulently represented as a remedy for nervous prostration, exhaustion, lack of energy, paralysis, locomotor ataxia, female troubles, neuralgia, etc. In October, 1920, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No 8669, issued April 28, 1921*]

[The Dr A W Chase "Nerve Pills" were exposed in the Propaganda Department of The Journal, Sept 7, 1918, and the matter has been reprinted in the pamphlet 'Miscellaneous Nostrums"]

QUASSIA COMPOUND TABLETS

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report, declaring that Quassia Compound Tablets (Flint, Eaton and Company) are inadmissible to New and Nonofficial Remedies

W A Puckner Secretary

Quassia Compound Tablets, marketed by Flint, Eaton and Company, Decatur, Ill, according to the label on a trade package submitted to the Council, contain in each tablet

Quassia	¾ grain
Chionanthus	1 grain
Wahoo	¾ grain
Nux Vomica	½ grain
Cascara	⅓ grain
Aloin	¼ grain
Ipecac	1/16 grain
Podophyllin	¼ grain
Gingerine	*q s*

In the advertising the "Cascara" of the label is replaced by the indefinite term "Cascarin and the 'Gingerine *q s'* by "Carminative Antigripe *q s'* Flint Eaton and Company informed the Council that 'Carminative Antigripe is C P Sodium Sulphite of which each tablet contains ¼ grain" The tablets were treated with dilute hydrochloric acid and the odor of sulphur dioxid became apparent This shows that the company's statement to the Council, that the tablets contain a sulphite, is correct and the formula on the label is incorrect

In the advertising for this preparation we read

> A careful study of this formula [which formula? That on the label or that in the general advertising?—Council] will reveal the out standing fact that while there are several drugs employed each ingredi ent is there for a purpose and all do splendid teamwork If your patient is constipated because the stomach is not sufficiently energetic the Quassia stimulates that organ to an increased secretion of digestive fluids and sets it to working normally If the liver be sluggish the Chionanthus and Wahoo prompt it to increased activity Chionanthus has no superior for producing a sustained healthy hepatic condition Should the bowels be slow and uncertain the small doses of Aloin Cascarin and Podophyllin stimulate to free peristaltic action while the Nux Vomica sets the nervous system right We use an effective Anti gripe so that there is no griping

It is absurd to suppose that a complex mixture of drugs in fixed proportions can have the actions claimed for Quassia Compound Tablets As regards the claim that "Chionanthus has no superior for producing a sustained healthy hepatic condition" it was brought out in a report of the Council on "Some Unimportant Drugs" (Reports of Council on Pharmacy and Chemistry, 1912, p 36) that the "claims for this remedy [Chionanthus] are not supported by experimental evidence and the clinical reports of its use fail to show indications of discriminating critical observation It is not noticed by most pharmacologic authorities"

Of Wahoo (Euonymus N F) the "Epitome of the U S P and N F" says *'Actions and uses*—Obsolete cathartic, toxic digitalis effects *Caption* the uncertain absorption of this drug makes its use inadvisable"

Quassia Compound Tablets (Flint Eaton and Company) are inadmissible to New and Nonofficial Remedies because (1) they contain drugs of unproved value, (2) their composition is needlessly complex and, therefore irrational, (3) unwarranted therapeutic claims are made for them, (4) the name is misleading and not descriptive of their composition, and (5) the statement of their composition is indefinite and incorrect

Correspondence

THE PLAN OF FULL-TIME CLINICAL TEACHERS

To the Editor—I have just read the remarks of the chairman of the Council on Medical Education and Hospitals to the House of Delegates as printed in the June 18 issue of The Journal I think the wording of that portion which discusses the plan of full-time clinical teachers is most unfortunate It conveys the impression that the medical profession resents the aid and advice which has been given in matters of medical education from persons outside the profession resents the aid and advice which have been given in those engaged in medical education A large portion of the advance which has been made in medical education in the last quarter of a century has been adapted from other departments of education under the advice and direction of great educational leaders, conspicuously such university presidents as President Eliot and the late President Harper The keen and incisive criticism of the American medical schools in the report of Mr Abraham Flexner to the Carnegie Foundation was one of the most potent factors in arousing the faculties of our medical schools to their glaring deficiencies It was more impressive and effective because of the fact that it came from an educational expert in fields other than medicine

The question of full-time clinical teachers is by no means settled, nor can it be for some years to come The subject is much too large for full discussion in such a communication as this, but briefly these things may be said

1 The teaching of the clinical branches by practitioners of medicine as an incidental diversion to practice was utterly inadequate and unsatisfactory

2 No one, I think, has contemplated that in any medical school the clinical instruction should be in the hands exclusively of full-time teachers If such a plan were attempted it would be possible only in certain heavily endowed schools In its extreme form it has nowhere been attempted

3 In the medical schools where the so-called full-time plan is in operation, a number of the members of the clinical faculty (varying in different schools) are on a full-time basis, the remainder are not Many variations of the full-time plan are thus possible Some are in actual operation

The real questions at issue are these

What proportion of the necessarily large personnel of the clinical faculty should be on a full-time basis? Should these

be the older and more experienced teachers, or the younger men who might be employed to give their undivided time to teaching and research from the ages of 30 to 40 (incidentally their most productive period) with the expectation that they would then engage in private practice for a part of the time and devote the remainder of their time to the work of the school? Is it possible to secure a sufficient number of teachers of mature years and reputation who are willing to forego the large emoluments of private practice for such salaries as the medical schools can offer? If not, can we hope to develop a group of such men in the coming generation? Should the conduct of the school, its educational policies and methods be determined by the full-time members only, the part-time teachers constituting an adjunct faculty, without voice in such matters, or should the faculty be on a democratic basis, all persons engaged in teaching having a vote? Should the heads of departments, if such there be, be chosen only from full-time teachers but selected solely in reference to qualities for such administrative work? Should some or all of the part-time teachers be required to restrict their private practice to office and hospital, the office to be located in immediate proximity to the college and hospital so that the working hours of each faculty member are all spent in or near this center? Shall the part-time teacher be limited as to the amount of time he may devote to private practice and, finally, is it logical or wise to permit the full-time clinician to accept fees for consultation, or require him to turn these over to the college?

These are all problems which can be solved only by an experiment extending over many years Obviously, the expense of maintenance of a medical school is greatest in which there are the largest number of full-time clinical teachers in the higher ranks Indeed, this expense would be prohibitive were it not for generous endowments, and the medical profession is under great obligation to the foundations and individuals which have made this experiment possible

It is, indeed, to be hoped, as the chairman of the Council has suggested, that it may be made possible after a number of variations of the full-time plan are thoroughly tried out Time and trial can alone determine which plans will be most successful The medical profession can ill afford to reject the aid and advice from every possible source to elevate the standards of medical education in this country

JOHN M DODSON, M D, Chicago

PSYCHOLOGY OF EVERYDAY LIFE

To the Editor —A G Tansley, in "The New Psychology and Its Relation to Life" (New York, Dodd, Mead & Co, 1921), speaking of forgetting associated with a repressed complex, quotes from Freud the case of a man who was unable to remember the words "with a white covering" in a well known poem, because these words were associated with a shroud "The mind shrunk away, as it often does, from thoughts of death, and the words of the poem, which had been taken up into the repressed death-complex showed the oblivion to which the complex had been consigned"

How are we to interpret a new repression in Mr Tansley's cerebration? Freud, who quotes the case from Jung, does not name the author of the poem in which the words occur, but speaks of "the well-known poem," Heine's "Ein Fichtenbaum steht einsam" Tansley, not only once (p 109), but again on page 115, speaks of it as "Schiller's poem" It would be interesting to know whether the repression is due to the aversion to Heine among certain people, or to some cruder trick of memory But if the latter, what becomes of the theory?

GEORGE DOCK, M D, St Louis

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed Every letter must contain the writer's name and address, but these will be omitted on request

KIELLAND'S FORCEPS

To the Editor —In THE JOURNAL Jan 24, 1920, p 292, there is a reference to Kielland's forceps Please describe these forceps and their mode of application

L SENIS ALMELA, M D, Montanejos, Spain

ANSWER—Dr C Kielland is an obstetrician of Christiania, Norway, formerly in charge of the gynecologic clinic, who thinks he has obviated all the drawbacks of the ordinary forceps with the forceps he has devised, which have also been commended by many others The anterior blade of the forceps is introduced separately the concave side turned away from the head of the fetus By this method of introduction, the tip can be insinuated very gently and without the slightest injury of displacement of the fetal head Once introduced to the required depth, it is turned completely around to bring the concave side against the side of the head, against which it fits closely from the cheek near the mouth to the tubera parietalia The twisting around of the blade is easily accomplished without injury The posterior blade is introduced directly and it fits symmetrically against the opposite side of the head Traction is exerted in the axis of the handle of the forceps, the blades fitting in it in bayonet shape The only drawback, he says, is that the exact position of the fetal head, direction of the sagittal suture and position of the fontanels have to be determined beforehand, in order to introduce the anterior blade exactly at the correct point The forceps have been described with illustrations in Scandinavian journals and also in the *Monatsschrift fur Geburtshülfe und Gynakologie* (**43** 48, 1916), with nine illustrations

'TEKARKIN' CANCER CURE

To the Editor —I am in receipt of *Therapeutic Leaves* the contents of which are devoted to the cause and cure of cancer This leaflet is published by the National Bio-Chemical Laboratory of Mount Vernon N Y They are manufacturing Tekarkin' remedy claiming to cure cancer I have not seen any recent literature concerning this new found cure" I am sending under separate cover the pamphlet

LEONARD A JULSEBOSCH, M D Fort Edward N Y

ANSWER—"The National Bio-Chemical Laboratory" (Edward Percy Robinson) and "Tekarkin," the cancer "cure," were discussed in the Propaganda department of THE JOURNAL, May 28, 1921 A reprint will be sent in response to any request accompanied by a two cent stamp

ARSPHENAMIN AMERICAN AND GERMAN

To the Editor —Please let me know the consensus of opinion as to the respective advantages and disadvantages of American and German neo-arsphenamin Can you tell me whether the latter is superior?

G RIGAU M D, Yauco Porto Rico

ANSWER—The neo-arsphenamin made here and abroad is essentially the same The quality of the product of the United States is controlled by the U S Public Health Service, and there is no reason to believe that foreign made products are superior in any way whatsoever

FACTITIOUS DERMATITIS

To the Editor —It might interest M Q E Mississippi' (THE JOURNAL May 28 1921, p 1517) to know that I had a case of dermatitis factitia which fooled not only myself but also several surgeons and medical men to whom I referred the patient a young woman They made different suggestions such as the removal of various foci of infection, including the tonsils appendix and gallbladder Finally, I decided to have a dermatologist see her He looked her over called me to one side and informed me that she was burning herself with phenol (carbolic acid) This discovery resulted in a cure but the girl later entered a nurses training school where she again repeated the performance of burning holes in her arms

P M M, Illinois

Advertised Remedies Dangerous—Many advertised remedies are dangerous because they cause deferring the proper steps until valuable time is lost If a ready-made medicine will stop a cold in two minutes, why go to bed? Yet innumerable examples prove that in such conditions rest and simple treatment are more valuable than any drug so far known, and indispensable even with the most promising serum or vaccine.—G Dock, *J Missouri M A* **18** 84, 1921

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA Montgomery July 12 Chairman Dr Samuel W Welch Montgomery

CONNECTICUT Hartford July 12 13 Sec, Regular Board Dr Robert L Rowley, 79 Elm St Hartford

CONNECTICUT New Haven July 12 Sec Eclectic Board Dr James E Hair 730 State St Bridgeport Sec Homeo Bd, Dr Edwin C M Hall 82 Grand Ave New Haven

DISTRICT OF COLUMBIA Washington July 12 14 Sec Dr Edgar P Copeland, 1315 Rhode Island Ave Washington D C

INDIANA Indianapolis July 12 14 Sec, Dr Wm T Gott 84 State House Indianapolis

MARYLAND Baltimore July 19 Sec Regular Board Dr J McP Scott, 141 W Washington St Hagerstown

MASSACHUSETTS Boston July 12 14 Sec, Dr Walter P Bowers Room 144 State House Boston

NEW MEXICO Santa Fe, July 11 12 Sec, Dr R E McBride Las Cruces

OKLAHOMA Oklahoma City July 12 13 Dr J M Byrum Shawnee.

SOUTH DAKOTA Deadwood July 19 20 Director of Medical Licensure Dr H R Kenaston Bonesteel

WASHINGTON Olympia July 12 Commissioner of Licensure Mr Wm Melville Olympia

WEST VIRGINIA Charleston July 12 State Commissioner of Health Dr L T Vinson Masonic Bldg Charleston

Arizona April Examination

Dr Ancil Martin, secretary, Arizona State Board of Medical Examiners reports the written examination held at Phoenix, April 5, 1921 The examination covered 10 subjects and included 100 questions An average of 75 per cent was required to pass Of the 5 candidates examined, 2 passed and 3 failed The following colleges were represented

College	Year Grad	Per Cent.
PASSED		
Kansas Medical College	(1898)	81
University of Michigan Medical School	(1906)	80 9
FAILED		
Louisville Medical College	(1906)	69 2
University of Missouri School of Medicine	(1898)	72 9
St Louis College of Physicians and Surgeons	(1920)	57 8

Connecticut March Examination

Dr Robert L Rowley, secretary, Connecticut Medical Examining Board reports the written examination held at Hartford, March 8-9 1921 The examination covered 7 subjects and included 70 questions An average of 75 per cent was required to pass Of the 37 candidates examined 29 passed and 8 failed The following colleges were represented

College	Year Grad	Per Cent.
PASSED		
Yale University School of Medicine	(1920)	84 8
Atlanta Medical College	(1914)	79 1
Bennett Medical College	(1914)	75
Rush Medical College	(1903)*	
Bowdoin Medical School	(1920) 76 5	84 8
College of Physicians and Surgeons Baltimore	(1907)	82 3
Johns Hopkins University Medical Department	(1907)*	
Medical School of Harvard University	(1920)	83 1
Tufts College Medical School	(1919) 77 2	86 8
Bellevue Hospital Medical College	(1892)*	
Columbia University (1886)*	(1890)*	
Cornell University Medical College	(1907)*	
Fordham University School of Medicine	(1920)	82 4
Long Island College Hospital	(1917)	79 3
Jefferson Medical College of Philadelphia	(1919)	79 2
Medico Chirurgical College of Pennsylvania	(1915)	75
University of Pennsylvania School of Medicine	(1910, 2)*	
Woman's Medical College of Pennsylvania	(1912)	75 4
Vanderbilt University Medical Department	(1906)*	
University of Vermont College of Medicine	(1920) 78 4	81 8
Medical College of Virginia	(1919)	75
University of Budapest	(1912)†	75
American University of Syria	*(1907)†*	*76 3*
Ottoman Medical School	(1917)†	80 8
FAILED		
Georgetown University School of Medicine	(1919)	74 1
Fordham University School of Medicine	(1916)	60 6
Temple University	(1919)	66 7
University of Vermont College of Medicine	(1914)	68 8
Queens University Faculty of Medicine	(1904)*	
University of Montreal Faculty of Medicine	(1916)*	
University of Naples	(1920)† 35 8	*46*

* No grade given
† Graduation not verified

Iowa April Examination

Dr Guilford H Sumner, secretary, Iowa State Board of Medical Examiners, reports the written examination held at Des Moines, April 12-14 1921 The examination covered 8 subjects and included 100 questions An average of 75 per cent was required to pass Three candidates were examined all of whom passed Seventeen candidates were licensed by reciprocity The following colleges were represented

College	Year Grad	Per Cent
PASSED		
Loyola University School of Medicine	(1918)	75
Rush Medical College	(1876)	82 2
University of Vermont College of Medicine	(1918)	86

College	Year Grad	Reciprocity with
LICENSED BY RECIPROCITY		
George Washington University Medical School	(1916)	Minnesota
Bennett Medical College	(1915)	W Virginia
Loyola University Medical School	(1917 3)	Illinois
Rush Medical College (1908)	(1917)	Illinois
University of Illinois (1913)	(1919)	Illinois
University of Louisville Medical Department	(1916)	Nevada
University of Minnesota Medical School	(1920)	Minnesota
John A Creighton Medical College	(1917)	Nebraska
University of Nebraska College of Medicine (1920)	(1921)	Nebraska
Meharry Medical College	(1906)	Texas
Medical College of Virginia	(1907)	Virginia
Western University Medical School	(1906)	Nebraska

Minnesota April Examination

Dr Thomas S McDavitt, secretary, Minnesota State Board of Medical Examiners, reports the oral, written and practical examination held at Minneapolis April 5-7, 1921 The examination covered 15 subjects and included 80 questions An average of 75 per cent was required to pass Of the 13 candidates examined 12 passed and 1 failed Twenty-four candidates were licensed by reciprocity One candidate was licensed by endorsement of credentials The following colleges were represented

College	Year Grad	Per Cent
PASSED		
Northwestern University Medical School	(1920)	88 5
Johns Hopkins University Medical Dept (1911) 89 1	(1918)	83
Med Sch of Harvard Univ (1909) 92 4 (1920) 91 9	(1921)	86 5
University of Minnesota Medical School (1918) 89 6	(1920)	88 3
89 2 93 1 (1921)* 86 5 89 1		
University of Toronto Faculty of Medicine	(1907)	87 3
FAILED		
Hospital College of Medicine Louisville	(1902)	65
Chicago College of Medicine and Surgery	(1916)	N Dakota
Northwestern University Medical School (1919)	(1920)	Illinois
Rush Medical College (1917)	(1920)	Illinois
University of Illinois	(1918)	Illinois
Johns Hopkins University Med Dept (1904) Ohio	(1906)	Wisconsin
University of Maryland	(1909)	Maryland
University of Michigan Medical School	(1904)	Dist Colum
(1909) (1918) (1919) Michigan		
Washington Univ Med School (1902) Washington	(1919)	Missouri
John A Creighton Medical College	(1914)	Nebraska

College	Year Grad	Reciprocity with
LICENSED BY RECIPROCITY		
University of Nebraska Coll of Med (1918)	(1920)	Nebraska
University of Pennsylvania (1912) Maine (1907)	(1913)	Penna
Vanderbilt University Medical Department	(1916)	Tennessee
University of Virginia	(1914)	Mississippi
University of Heidelberg	(1899)	Maryland

College	Year Grad	Endorsement with
ENDORSEMENT OF CREDENTIALS		
University of Illinois	(1920)	Nat l Bd of Med Exam

* These candidates have finished the medical course and will obtain the M D degree after they have completed a year's internship in a hospital

Wisconsin March Examination

Dr J M Dodd, secretary, Wisconsin State Board of Medical Examiners, reports that 8 candidates were licensed by reciprocity and 3 candidates were licensed on government credentials at the meeting held at Madison, March 30, 1921 The following colleges were represented

College	Year Grad	Reciprocity with
LICENSED BY RECIPROCITY		
Northwestern University Medical School	(1911)	Illinois
University of Illinois	(1913)	Illinois
University of Michigan Medical School	(1916)	Michigan
St Louis University School of Medicine (1914)	(1916)	Missouri
Dartmouth Medical School	(1900)	Illinois
Albany Medical College	(1906)	New York
University of Pennsylvania	(1917)	New York

College	Year Grad	Endorsement with
ENDORSEMENT OF CREDENTIALS		
Rush Medical College	(1917)	U S Army
University of Michigan Medical School	(1916)	U S Army
Medical College of the State of South Carolina	(1917)	U S Army

Miscellany

KOPLIK SPOTS

In 1896, Koplik[1] published the result of a study of the enanthems on the buccal mucous membranes in measles showing that this eruption, preceding the appearance of the exanthem on the skin by from three to five days, is characteristic of measles and occurs in no other known condition His description was accurate, and the spots have been generally known as "Koplik spots" since that time It is interesting, however, to learn that this eruption had been observed by at least two other physicians who had studied it thoroughly previous to that time According to Herrman,[2] Filatow in the third edition, 1895, of his book on "Acute Infectious Diseases of Children" briefly described this buccal eruption, and in 1878 Flindt,[3] a Danish physician, made a report to the Danish government on a measles epidemic which he had observed on the Island of Sanso in which he observed the spots on the buccal membranes He described them in detail, following the development from day to day His description follows

In a few cases seen on the first day of definite illness, there was only some diffuse redness in the pharynx On the second day in the evening the appearances are thus described (p 210) "The tonsils and the mucous membrane of the posterior pillars of the fauces as in the morning showed an even hyperemia, slight swelling, but on the anterior surface of the soft palate and extending forward to the back part of the hard palate, in which location the mucous membrane otherwise just as in other places of the oral cavity was of a natural color, there was noted an exanthem, consisting of a number of round or more irregularly formed, light red, not quite sharply defined spots, which hardly rose above the otherwise normal appearing surface of the mucous membrane, these spots were from pinhead to lentil in size, partly singly, partly gathered in quite irregular in part confluent groups But what in particular gave this exanthem a peculiar appearance were numerous small, whitish glistening punctiform, apparently vesicular formations that were seen in the center of the small, red spots, and which by the grouping of these formed similar irregular groups These extremely small miliary vesicles could be both seen and felt as rising above the surface The conjunctiva palpebrarum now showed itself hyperemic throughout its whole extent, and besides the injection, which was netlike owing to the distribution of the vessels, there was noted sometimes also a spotted distribution of redness and similar miliary, dully lustrous, prominent formations as on the mucous membrane of the palate Most often, however, this could not be recognized definitely on account of the marked general hyperemia

On the third day the appearances are thus described (p 211) "The tongue moist, with a light whitish coat and without prominent papillae On the otherwise and generally naturally colored mucous membrane in the oral cavity the exanthem mentioned was found now always widely spread over the whole of the anterior surface of velum palatinum, the anterior pillars of the fauces and often also over the hard palate with the exception of its anterior third, it formed numerous partly discrete, partly confluent spots in irregular configurations of a deeper red color than earlier, here and there slightly elevated over the level of the rest of the mucous membrane and provided with the already described punctiform vesicles with a dull luster isolated or grouped according to the arrangement of the spots, but here and there they found also on the normally appearing mucosa just as there also could be found spots without these vesicular formations Similarly grouped spots with vesicles were noted now also on the mucous membrane of the cheeks, particularly on the parts directly opposite the space between the upper and lower canines The gingiva and mucous membrane on the inside of the lips as a rule of normal or mildly hypermic appearance, nearly always at this time with recognizable exanthem The tonsils and both arcus pharyngopalatini as earlier uniformly hypermic"

On the fourth day the description is as follows (p 213) "The exanthem on the palate and the mucous membrane of the cheeks sharply defined, the spots often markedly confluent and on the cheeks more widely spread than before"

Fifth day "Exanthem in the mouth as a rule as well marked as at any time, at the same time there was noted now quite frequently light red spots on the mucous membrane of the lips and even on the prolabium, less frequently and more faintly also on the gingiva The hyperemia in the posterior part of the pharynx unchanged"

Sixth day "The mouth exanthem no longer visible, a more or less marked diffuse redness was seen, however, oftenest on the mucous membrane of the cheeks and the palate

The small vesicular formations with the dull luster that were observed together with the morbillous spots on the mucous membrane of the palate and mouth were found especially where the folds in the membrane are most numerous, and as they closely resembled the follicles of the normal mucous membrane that as a rule can be recognized in good light as small shining parts, being often only larger and more definite, there can hardly be any doubt but that the vesicular formations are caused by swelling of these follicles Nevertheless this does not make them any less peculiar of the morbillous exanthem both by virtue of their size as well as *their grouping and connection with the spots*"

According to Herrman, who was able to secure a German translation of a portion of Flindt's work, the eruption described by Flindt is not the same as that observed by Koplik However, Filatow, Herrman believes, undoubtedly described the Koplik spots but did not give a detailed account of the cycle of their appearance In any event, it is interesting to see how carefully and accurately Flindt observed this condition and the detail in which he presented his report It may well serve as a lesson to the practitioner on the research opportunity offered to him, provided he utilizes to the fullest extent the faculties with which Nature endowed him

1 Koplik Henry Diseases of Infancy and Childhood, New York 1918 p 289
2 Herrman Charles Measles Incubation, Infectivity Immunity Early Manifestations Arch Pediat December 1914
3 Flindt N Maslingeepidemien paa Samso 1878 (The Measles Epidemic on Samso 1878) in Medicalberetning for Kongeriget Danmark for Aaret 1878 Copenhagen 1887

POISON GAS IN WAR

Last year the International Red Cross Societies passed a resolution at a convention in Geneva urging all governments to sign an agreement in addition to the Hague Convention, for the prohibition of poison gas in warfare A defender of the use of poison gas has arisen in England in the person of an eminent chemist, Sir W J Pope, professor of chemistry in the University of Cambridge, and president of the Society of Chemical Industry In an article contributed to the *Chemical Age* he refers to the protest made in 1915 by men qualified to speak for the medical profession—the presidents of the Royal Colleges of Physicians and of surgeons of England Scotland and Ireland, and the Regius professors of physic in the Universities of Oxford and Cambridge—who urged that the comity of nations should prohibit chemical warfare They declared that use of gas is self-condemned for the following reasons It is an uncontrollable weapon, whose effects cannot be limited to combatants, it is an unclean weapon, condemning its victims to death by long drawn out torture, it opens the door to infinite possibilities of causing suffering and death, for its further development may lead to the devising of an agent that will blot out towns and even nations Sir William Pope traverses all these reasons and holds that "poison gas is far less fatal and cruel than any other instrument of war" He contends that poison gas is responsible for many casualties and few deaths, and that it is therefore a merciful agent "Among the mustard gas casualties the deaths were less than 2 per cent, and when death did not ensue complete recovery generally ultimately resulted Contrast this with the proportion of deaths among the casualties from projectiles and with the maimed and crippled produced by them Other materials of chemical warfare which were in use at the time of the armistice do not kill at all they produce casualties which after six weeks in hospital are discharged without permanent hurt"

Book Notices

DIAGNOSIS OF PROTOZOA AND WORMS PARASITIC IN MAN By Robert W Hegner Associate Professor of Protozoology and William W Cort Associate Professor of Helminthology, Department of Medical Zoology, School of Hygiene and Public Health The Johns Hopkins University Paper Pp 72 Baltimore The Johns Hopkins University, 1921

In pamphlet form the authors have presented information relative to the protozoa and worms parasitic in man Classification is brief, the descriptions and technic are accurate and to the point There are comparative tables and references to significant literature The numerous illustrations are a valuable feature

ADVANCED LESSONS IN PRACTICAL PHYSIOLOGY FOR STUDENTS OF MEDICINE By Russell Burton Opitz S M, M D Ph D Associate Professor of Physiology Columbia University Cloth Price $4 net Pp 268 with 123 illustrations Philadelphia W B Saunders Company 1920

This is a laboratory outline designed to accompany the author's textbook It is arranged for convenience of instruction into experiments which should require one laboratory period of three hours for their performance The book contains many illustrations, some of which are duplicates of those in the textbooks, and the directions are clearly given The material covers the field well and should prove adequate for the usual college course in physiology

A COMPEND OF DISEASES OF THE SKIN By Jay Frank Schamberg A B M D, Professor of Dermatology and Syphilology Graduate School of Medicine University of Pennsylvania Sixth edition Cloth Price $2 net Pp 314 with 119 illustrations Philadelphia P Blakiston's Son & Co, 1921

This, like the preceding editions, is an excellent book of its kind All of the common and most of the rarer, cutaneous disorders are covered, and there is a short section dealing with the anatomy of the skin and with the general symptomatology and classification of cutaneous disorders The text is of necessity very concise, but the salient points of all the conditions treated are well brought out The frequent tabulation of the points in the differential diagnosis of certain dermatoses is a helpful feature The treatment of syphilis has been rewritten, but the space allotted to a discussion of the use of arsphenamin seems inadequate particularly in comparison with the more detailed consideration of the treatment of neurosyphilis The illustrations are fairly numerous, and for the most part are adequate, although the quality of some could be improved considerably The text is recommended as a ready reference book for those who are concerned only with the essentials of the subject

LABORATORY MANUAL FOR THE DETECTION OF POISONS AND POWERFUL DRUGS By Dr Wilhelm Autenrieth Professor in the University of Freiburg Authorized Translation by William H Warren Ph D Fifth edition Cloth Price $3 50 net Pp 342 with 25 illustrations Philadelphia P Blakiston's Son & Co 1921

This edition has been enlarged somewhat by the addition of new material by the translator, although both this and the former edition are translations of the fourth German edition Among the new tests added we note Fujiwara's pyridin test for chloroform, Magnin and Zappi's method for isolating alkaloids, the para-dimethylamino-benzaldehyd test for the mydriatic alkaloids, Denigès and Pisani's tests for cocain, Guglialmelli's test for pyramidon, Palet's test for pyramidon, Palet's test for apomorphin, Lautenschläger's diazonium test for morphin, and Warren's test for papaverin An entirely new section on wood (methyl) alcohol has been inserted owing to the importance of detecting this poison in the numerous cases which have arisen in the last few years As the title indicates, the book concerns itself with the methods for the detection of poisons so that it cannot replace the larger works on toxicology which cover a much more extensive field However for use in the teaching of the chemical phases of toxicology this work has found and will continue to find wide acceptance as it covers the field in a very satisfactory manner The style is clear and concise, the tests for the various poisons are the generally accepted ones and the methods of separation and identification of the various groups of poisons are sufficient for the purpose of the general worker We have no hesitancy in recommending this book to the medical student as well as to those workers who may have occasion to test material submitted to them for poisons

HOW THE MIND CURES A Consideration of the Relationship Between Your Outside and Your Inside Individualities and the Influence They Exercise Upon Each Other for Your Physical and Mental Welfare By George T Butler A M M D Medical Director North Shore Health Resort Winnetka Illinois Cloth Price $2 50 net Pp 286 New York Alfred A Knopf 1921

The author has written fourteen chapters of conversation between a seeker and a physician in the style of the ancient Greek dialogues As was the case then, the seeker now and then shows a glimmer of intelligence, but impresses one on the whole as being somewhat of a *non compos mentis* Nevertheless he seems to pick out the right questions to ask the physician at the right time and the physician is always ready with a perfect answer By this circumlocutory method the fundamental facts of good hygiene are brought out and some excellent principles of mental hygiene are presented in a sugar-coating of literary reference and historical review The chapters on the History of Psychotherapy on Air," on 'Food Supply," and on "Fatigue" are especially worth while The excellent results achieved by the seeker were probably due in large part to the personality of his physician and to the fact that the physician had the time to talk to him for ten full days thus impressing on him the vital points If the reader will take the necessary time to get all of these points firmly fixed in his mind, he will undoubtedly benefit greatly Dr Butler has a pleasing method of expression, and his book is full of common sense

DIE SPECIFISCHE PERCUTANBEHANDLUNG DER TUBERKULOSE MIT DEM PETRUSCHKYSCHEN TUBERKULINLINIMENT Von Dr Felix Grossmann Oberarzt an der Landesanstalt Gordon bei Brandenburg a H Mit einem Geleitwort von Prof Dr J Petruschky Vorsteher des Hygienischen Instituts der technischen Hochschule in Danzig Langfuhr Paper Price 12 marks Berlin Urban & Schwarzenberg 1921

Grossmann's book is the response to inquiries from country and small-state physicians, following his original journal publications on the treatment of tuberculosis with Petruschky's liniment It seems rather highly technical for physicians of this class but the author holds that a thorough grounding in theory is necessary to proper administration of tuberculin It is noteworthy in this connection, however that Petruschky himself differs from Grossmann in his interpretation of the tuberculin reaction The latter openly commits himself to the view that the phenomenon is a manifestation of anaphylaxis while Petruschky in the foreword states his belief that the hypersensitiveness of the tuberculous is not the same sort of condition as the allergy of a patient sensitive to foreign serum Grossmann reviews the early work of Spengler and Petruschky on rubbing in tuberculin Petruschky made a great contribution in proving that the skin not only is an excellent absorbing medium for whole bacteria, but also is capable of digesting them during the process experiments on guinea-pigs having shown that tubercle bacilli rubbed into the skin were in the corium in a few hours, were broken up in twenty-four hours and quite digested in forty eight hours This observation led to his introduction for therapeutic purposes of a glycerolated emulsion of dead, unground bacilli together with the evaporated broth on which they grew It will probably be agreed by all that if tuberculin is of any value in treatment it is through the production of what is known as the focal reaction, the inflammation following the introduction of tuberculin and the succeeding resorption It is Grossmann's point that the tuberculin liniment produces this readily and yet by a process of such slow absorption that febrile reaction and other unpleasant symptoms are avoided the treatment being carried out by the simplest of all methods inunction Numerous cases are described, the author himself for one, and while there is something eminently unconvincing in the citation of individual cases cured by tuberculin Grossmann makes one point which justifies the most serious consideration This is that the time to treat tuberculosis is in what Petruschky comparing with syphilis terms the primary stage namely, the childhood lymph gland infection With the passing of that stage and the development of open tuberculosis the chance for complete healing is in the majority of instances gone Grossmann claims that

Medicolegal

Basis and Weight of Opinions as to Insanity

(Kelley v State (Ark) 226 S W R 137)

The Supreme Court of Arkansas says, in this homicide case wherein one of the defenses was insanity, that medical experts, when duly qualified as such, are competent witnesses on the issue of insanity Their opinions expressed in answer to correct hypothetic questions embracing data which the evidence tends to prove, are relevant testimony Hypothetic questions must contain all the undisputed facts essential to the issue When there is a dispute about the existence of the facts stated in the hypothetic question, it is the exclusive province of the jury to determine whether such facts do exist. The truth or existence of each and every fact included in the hypothetic question is assumed The opinions of the experts are built on this assumption, and if this foundation falls, the superstructure goes with it Therefore, if the jury finds that any fact stated in the hypothetic question is untrue, does not exist, the jury must then disregard the opinion of the experts But on the other hand if the jury finds that all the data stated in the hypothetic question exist, are true, then the jury must consider the opinion of the experts in connection with all the other evidence in the case The jury is the sole judge of the credibility of the witnesses, that is of the weight to be given their testimony This applies to the opinions of the experts as well as to the testimony of the other witnesses Under the guidance of instructions given it by the trial court, the jury is the sole and final arbiter of the issues of fact as to the sanity or insanity of the accused In determining that issue, the jury may give to the opinion of the experts, as well as to the testimony of any other witness, just such weight as the jury, under all the circumstances, believes it deserves

Classification of Drugless Healers

State v State Board of Drugless Examiners (Wash) 194 Pac R 388)

The Supreme Court of Washington says that the drugless practice statute of that state of 1919 provides that the following kinds of certificates shall be issued by the board To mechanotherapy, suggestive therapeutics, food hydroscultopathy, and for any other separate and system of drugless practice The plaintiff was license to practice suggestive therapeutics, but, that he had been improperly classified sought to do him a license to practice mental therapy His the classification made by the board were that, system operated through the mind of the patient was effected by the application of reason and ism was licensed under the designation of therapeutics a great percentage of suggestive hypnotists, whereas in the public estimation hypnotism are the subject of adverse criticism es to having the same difficulty which the has in exactly determining the rather sought to be drawn between the but it holds that it was not the islature, in providing licenses for these drugless healing that each practitioner itself a name to describe his practice and at name Four distinct classifications was provided for systems which were te to the four specifically described It the system explained by the plaintiff minate The fact that it was possible practice suggestive therapeutics whose s distasteful to him did not privilege r designation under which he would or did the fact that the board may licenses under names not set forth in e persons practicing under those cing what should properly be designs give to him the power to com- other error in his case It would distinction was not in the method that was used to secure the operation of the mental processes of the patient to encompass a cure, but that the provision as to suggestive therapeutics refers to a school of practice which operates through the mind of the patient and whether the cure is secured by mental operations resulting from suggestions from the practitioner or from reasoning between the practitioner and the patient is of no importance Wherefore the action of the lower court in ordering the board to issue a new license to the plaintiff is reversed

General Duty Owed to Stricken Employees

(Carey Davis et al (Iowa) 180 N W R 889)

The Supreme Court of Iowa says that the plaintiff alleged in his petition that while he was employed by the defendants as a farm laborer and was working in the excavation of a gravel pit he became overheated and fell in a faint or fit of unconsciousness, and, having partially recovered therefrom and resuming work he again suffered an attack of that nature, and while he was in that condition the defendants caused him to be removed and laid in a wagon box where he was left in an even more exposed condition, unattended and without care or protection for four hours or more until he had recovered sufficiently to make his own way home with great difficulty He charged the defendants with negligence in failing to give him reasonable care in his sick and helpless condition, and in aggravating his suffering by placing him in the wagon box exposed to the rays of the sun and to the effect to weather conditions, whereby he became sick etc and asked to be allowed damages therefor The defendants demurred to the petition on the ground that no facts were alleged showing actionable negligence on their part nor any duty on their part to furnish the plaintiff the help or relief which he stated that he needed The demurrer was sustained, but the judgment sustaining it is reversed by the supreme court which however, wants it to be borne in mind that in this decision it confines its expression of opinion to the consideration of the single question of whether the petition stated a cause of action What damages might be recovered if the allegations of the petition were sustained on the trial, and the nature and measure thereof, the supreme court did not consider or decide

There was no allegation or claim that the faintness or prostration of the plaintiff was caused or in any manner produced by the neglect or misconduct of the defendants So far as the pleading went the cause of his ailment was entirely unknown, a misfortune for which damages were recoverable from no one If there was any failure of legal duty alleged it was in the charge that the plaintiff being stricken down and rendered helpless while in the defendants' service and on their premises and in their presence it became their duty to render him the needed aid and relief Did such legal duty arise under the alleged circumstances? It is unquestionably the well-settled general rule that in the absence of any agreement or contract therefor the master is under no legal duty to care for a sick or injured servant for whose illness or injury he is not at fault Though not unjust in principle this rule if carried unflinchingly and without exception to its logical extreme is sometimes productive of shocking results To avoid this criticism there is a tendency of the courts to hold that when in the course of his employment a servant suffers serious injury or is suddenly stricken down in a manner indicating the immediate and emergent need of aid to save him from death or serious harm the master if present is in duty bound to take such reasonable measures or make such reasonable effort as may be practicable to relieve him even though such master be not chargeable with fault in bringing about the emergency Assuming the truth of the plaintiff's petition that he became suddenly ill, prostrate and helpless in the defendants immediate presence, the court holds that they were required to make some reasonable effort to render him the aid his immediate necessities demanded Not necessarily that they were bound to employ a physician or to take him into their own home but they could at least have seen that he was placed in some proper shelter and his family or friends notified Furthermore, the defendants having assumed to pick up the plaintiff in his unconscious condition and remove him from the place where

the liniment treatment is the best administration for this type of tuberculosis and class of patient, and permits easy use on a large scale in what he calls Familien- and Ort-sanierung The terms are self-explanatory Directions for dilution and usage are given, and the contraindications enumerated They resemble those for tuberculin treatment in general

ŒDEMA AND NEPHRITIS A Critical Experimental and Clinical Study of the Physiology and Pathology of Water Absorption in the Living Organism By Martin H Fischer Doctor of Medicine Eichberg Professor of Physiology in the University of Cincinnati Third edition Cloth Price $10 Pp 922 with 217 illustrations New York John Wiley & Sons 1921

The changes in this edition are additions to the text of a more detailed discussion of hydrophilic colloids, observations on the swelling of aleuronat, further experiments on swelling and solution of gelatin in nonacid mediums, consideration of hydration capacities of proteins, and further discussions of the nature of water secretion, of the distinction between swelling and solution of colloids, of behavior of colloids in *the presence of buffer mixtures, of the nonrelationship* between disease of the kidney and the so-called signs symptoms and complications of nephritis, also suggestions for treatment of nephritis and "a bolder insistence on the purely infectious origin of vascular disease with its consequences including the chronic interstitial nephritis of Bright' The book is the outcome of an able effort to present a practical consideration of edema and nephritis as due to changes in the colloid state of protoplasm It will be recalled that the view and theories of the talented author when first advanced met with severe criticism and condemnation His vindication now seems complete Here we have the third edition of his book based on those views and theories which in the mean time have become the basis of clinical tests in general use and of methods of treatment

LEHRBUCH DER DIFFERENTIALDIAGNOSE INNERER KRANKHEITEN Von Professor Dr M Matthes Direktor der Medizinischen Universitats Klinik in Königsberg in Pr Second edition Paper Price 68 marks Pp 621 with 106 illustrations Berlin Julius Springer 1921

The second edition of Prof M Matthes' differential diagnosis of diseases of internal medicine compares favorably with any recent work of its kind It is unfortunate that books of this character which on account of their completeness and scope, are of such great value, cannot be made available to a large number of practitioners to whom this volume would appeal in particular An English translation is highly desirable The subject is covered in twenty-two chapters comprising acute and chronic infectious diseases of the peritoneum the respiratory tract, cardiovascular and renal system, the gastro-intestinal tract chronic bone and joint diseases and some forms of neuralgia. One chapter is devoted to the differential diagnosis of diseases of metabolism of endocrine origin The usual plan of first emphasizing the subjective and objective symptoms of the particular disease in question, followed by a consideration of the differentiation of every other condition which may be confused with the former even remotely so, is followed. Forty-six pages are devoted to the diagnosis of diseases of the peritoneum and of ileus Every possible intra-abdominal condition is covered as completely as one could expect, forty-five pages are devoted to the disturbances of the cardiovascular system, and more than a hundred to those of the intestinal tract A hasty perusal is made possible by marginal references Roentgen-ray studies of the gastro-intestinal and respiratory tracts and pneumoperitoneum are given full consideration The author lays considerable stress on liver function tests American readers would expect to see emphasis laid upon points which in many instances are accepted almost without question Thus one would be tempted to criticize the failure to mention the relative importance of the excretion of urea, uric acid and creatinin as evidence of disturbed renal function The author has had little experience with the phenolsulphonephthalein test, and devotes only a few lines to the subject Other functional renal tests are given in detail Matthes gages the functional capacity of the heart by the clinical signs, as dyspnea and edema, and the size of the heart, rather than by mechanical means He does not feel that the electrocardiogram can furnish functional proof of heart capacity, although he does say that an inverted T-wave is a bad prognostic omen On the other hand, a positive T-wave does not rule out disease of the myocardium The tests of functional capacity based on various types of work are considered inexact No mention is made of the skin tests in asthma and hay-fever, nor is fractional aspiration considered These few omissions, with the possible one exception (skin tests) are more than outweighed by the excellent presentation, arrangement of the text, ease of reading, numerous illustrations and a full bibliography

GONOCOCCAL INFECTION IN THE MALE For Students and Practitioners By Norman Lumb O B E, M B B S Clinical Assistant St Peter's Hospital for Stone Cloth Price $6 Pp 328, with 178 illustrations New York William Wood and Co 1921

This book unnecessarily increases the flood of publications on gonorrhea that have lately inundated the market of medical books The author's ambition seems to reach rather for accumulating numerous items than for emphasizing the leading points and sorting the chaff from the wheat The looseness in presenting definitions and in discussing pathologic conditions is another disagreeable feature Epididymitis and orchitis, for instance, should certainly not be confused in a specialistic publication Inflammation of the acini of the ureteral glands may hardly be defined as "abscesses being such a typical feature of gonorrheal urethritis," as the author asserts Obsolete instruments, as air dilating urethroscopes and Ultzman's irrigating catheter, are extensively described and illustrated, while an instrument as indispensable to the urologist as Guyon's capillary catheter is not even mentioned In his therapeutic suggestions, the author certainly will encounter opposition among American urologists, for instance when he advocates in acute anterior urethritis forced irrigations into the bladder The puncture of and iodoform injection into buboes is not mentioned in this book Instead of impressing on the reader the enormous dignity of an ocular *infection with the gonococcus and the necessity of expert* treatment, the author indulges in a discussion of the diagnosis and medical measures The recommendation of a rectal incision in certain cases of prostatic abscess may be *susceptible of discussion, but how about the statement that* drainage into the urethra following massage is the most satisfactory method for dealing with prostatic abscess?

THE P[illegible] OF POISON GAS IN WAR [illegible]er M D Professor [illegible] International Red Cross Societies p[illegible]land and Reserve Enrique [illegible]d convention in Geneva urging all govern[illegible]strations University [illegible]gement, in addition to the Hague Conv[illegible] Philadelphi[illegible]

In the [illegible]mon of poison gas in warfare A defend[illegible]date *refer-*
ence to [illegible]as has arisen in England in the pe[illegible]the idea of
specificne[illegible] Sir W J Pope, professor of c[illegible]*pre-Jennerian*
times T[illegible]bridge, and president of t[illegible]e chapters and
an appen[illegible] [illegible]an article contributed[illegible]al conditions of
infection and resistance, the general phenomena of immunity, toxins and antitoxins, agglutinins and precipitins, cytolysins, cellular resistance (phagocytosis, etc), complement fixation, application of complement fixation to the diagnosis of disease, hypersusceptibility, hypersusceptibility in man, defensive ferments The appendix considers the therapeutic employment of blood serum, prophylactic vaccination, and vaccine therapy The book, though smaller than some already in this field, is a satisfactory and reliable exposition of the fundamental principles of immunology, and merits many readers among physicians as well as students

DIAGNOSTIC DES TUMEURS Par Gustave Roussy Professeur agrege Chef des Travaux d Anatomie pathologique a la Faculte de Paris and Roger Leroux, Moniteur des Travaux pratiques d Anatomie pathologique a la Faculte de Paris Paper Price 25 francs Pp 302 with illustrations Paris Masson et Cie 1921

In the first part the definition and classification of tumors are considered and the different kinds of tumors succinctly described In the second part are described, by means of excellent black and white drawings, the structure of practically every variety of tumor To any one who desires a book on tumors for reviewing or as a guide in daily work this book is recommended warmly as reliable, brief and to the point

Medicolegal

Basis and Weight of Opinions as to Insanity

(Kelley v State (Ark) 226 S W R 137)

The Supreme Court of Arkansas says, in this homicide case wherein one of the defenses was insanity, that medical experts, when duly qualified as such, are competent witnesses on the issue of insanity Their opinions, expressed in answer to correct hypothetic questions embracing data which the evidence tends to prove, are relevant testimony Hypothetic questions must contain all the undisputed facts essential to the issue When there is a dispute about the existence of the facts stated in the hypothetic question, it is the exclusive province of the jury to determine whether such facts do exist The truth or existence of each and every fact included in the hypothetic question is assumed The opinions of the experts are built on this assumption, and if this foundation falls, the superstructure goes with it Therefore, if the jury finds that any fact stated in the hypothetic question is untrue does not exist, the jury must then disregard the opinion of the experts But, on the other hand if the jury finds that all the data stated in the hypothetic question exist are true, then the jury must consider the opinion of the experts in connection with all the other evidence in the case. The jury is the sole judge of the credibility of the witnesses that is of the weight to be given their testimony This applies to the opinions of the experts as well as to the testimony of the other witnesses Under the guidance of instructions given it by the trial court, the jury is the sole and final arbiter of the issues of fact as to the sanity or insanity of the accused In determining that issue, the jury may give to the opinion of the experts, as well as to the testimony of any other witness, just such weight as the jury, under all the circumstances, believes it deserves

Classification of Drugless Healers

(Wells v State Board of Drugless Examiners (Wash) 194 Pac R 388)

The Supreme Court of Washington says that the drugless healers' statute of that state of 1919 provides that the following forms of certificates shall be issued by the board To practice mechanotherapy, suggestive therapeutics, food science, physculopathy, and for any other drugless and coordinate system of drugless practice The plaintiff was granted a license to practice suggestive therapeutics, but, insisting that he had been improperly classified sought to have issued to him a license to practice mental therapy His objections to the classification made by the board were that, although his system operated through the mind of the patient, that operation was effected by the application of reason, and because hypnotism was licensed under the designation of suggestive therapeutics a great percentage of suggestive theropaths being hypnotists whereas in the public estimation hypnotists and hypnotism are the subject of adverse criticism The court confesses to having the same difficulty which the ordinary layman has in exactly determining the rather refined distinctions sought to be drawn between the various systems but it holds that it was not the purpose of the legislature, in providing licenses for these various systems of drugless healing that each practitioner might choose for himself a name to describe his practice and be licensed under that name Four distinct classifications were made, and a fifth was provided for systems which were separate and coordinate to the four specifically described It could not be said that the system explained by the plaintiff was separate and coordinate The fact that it was possible to license persons to practice suggestive therapeutics whose method of operation was distasteful to him did not privilege him to choose some other designation under which he would like to be licensed Nor did the fact that the board may have erred and granted licenses under names not set forth in the statute, although the persons practicing under those names were, in fact, practicing what should properly be designated suggestive therapeutics, give to him the power to compel the board to commit another error in his case It would seem to the court that the distinction was not in the method that was used to secure the operation of the mental processes of the patient to encompass a cure, but that the provision as to suggestive therapeutics refers to a school of practice which operates through the mind of the patient and whether the cure is secured by mental operations resulting from suggestions from the practitioner or from reasoning between the practitioner and the patient is of no importance Wherefore the action of the lower court in ordering the board to issue a new license to the plaintiff is reversed

General Duty Owed to Stricken Employees

(Carey Davis et al (Iowa) 180 N W R 889)

The Supreme Court of Iowa says that the plaintiff alleged in his petition that while he was employed by the defendants as a farm laborer and was working in the excavation of a gravel pit he became overheated and fell in a faint or fit of unconsciousness and, having partially recovered therefrom and resuming work he again suffered an attack of that nature, and while he was in that condition the defendants caused him to be removed and laid in a wagon box where he was left in an even more exposed condition, unattended and without care or protection for four hours or more until he had recovered sufficiently to make his own way home with great difficulty He charged the defendants with negligence in failing to give him reasonable care in his sick and helpless condition and in aggravating his suffering by placing him in the wagon box exposed to the rays of the sun and to the effect to weather conditions, whereby he became sick etc and asked to be allowed damages therefor The defendants demurred to the petition on the ground that no facts were alleged showing actionable negligence on their part nor any duty on their part to furnish the plaintiff the help or relief which he stated that he needed The demurrer was sustained, but the judgment sustaining it is reversed by the supreme court which however, wants it to be borne in mind that in this decision it confines its expression of opinion to the consideration of the single question of whether the petition stated a cause of action What damages might be recovered if the allegations of the petition were sustained on the trial and the nature and measure thereof, the supreme court did not consider or decide

There was no allegation or claim that the faintness or prostration of the plaintiff was caused or in any manner produced by the neglect or misconduct of the defendants So far as the pleading went, the cause of his ailment was entirely unknown a misfortune for which damages were recoverable from no one If there was any failure of legal duty alleged it was in the charge that the plaintiff being stricken down and rendered helpless while in the defendants service and on their premises and in their presence it became their duty to render him the needed aid and relief Did such legal duty arise under the alleged circumstances? It is unquestionably the well-settled general rule that, in the absence of any agreement or contract therefor the master is under no legal duty to care for a sick or injured servant for whose illness or injury he is not at fault Though not unjust in principle this rule if carried unflinchingly and without exception to its logical extreme, is sometimes productive of shocking results To avoid this criticism there is a tendency of the courts to hold that when in the course of his employment a servant suffers serious injury or is suddenly stricken down in a manner indicating the immediate and emergent need of aid to save him from death or serious harm the master if present is in duty bound to take such reasonable measures or make such reasonable effort as may be practicable to relieve him even though such master be not chargeable with fault in bringing about the emergency Assuming the truth of the plaintiff's petition, that he became suddenly ill prostrate and helpless in the defendants immediate presence, the court holds that they were required to make some reasonable effort to render him the aid his immediate necessities demanded Not necessarily that they were bound to employ a physician or to take him into their own home, but they could at least have seen that he was placed in some proper shelter and his family or friends notified Furthermore, the defendants having assumed to pick up the plaintiff in his unconscious condition and remove him from the place where

he fell, it became their duty to use reasonable care in so doing not to aggravate his misfortune One person seeing another in distress may or may not be under legal obligation to afford him relief, but, if he does undertake it, he is bound to act with reasonable prudence and care to the end that, if his effort be unavailing it shall at least not operate to increase the injury which he seeks to alleviate

Company Held Liable for Malpractice of Physician

(McMahan v Carolina Spruce Co (N C) 105 S E R 439)

The Supreme Court of North Carolina finds no error in a judgment in favor of the plaintiff on a verdict which included a finding that he was entitled to recover $4,000 damages for the malpractice of a physician employed by the defendant to treat him when he was injured while working for the defendant The court says that there could be no question but that there was some evidence which tended to establish the charge of unskilfulness in the method of treatment, and a failure to exercise proper care and to make a proper diagnosis There was undoubtedly also sufficient evidence that the defendant knew of the incompetence of the physician The particular allegation was that the physician assisted by another physician, failed to place the broken bones of the plaintiff's left arm in proper alinement but left them overlapping, and without a union between them, thus shortening the arm about two inches, and leaving it very crooked and ugly in appearance, and practically useless There was evidence that the physician was employed, and paid, from the wages of the employees, on the assessment plan, to treat them, and the defendant owed the duty to the plaintiff, after it had undertaken to secure a physician for him, to secure one of reasonable skill and ability The evidence of a prior suit to which the defendant was a party, and in which it was informed of the physician's lack of skill, was sufficient to charge it with notice of the same on the question of negligence It was not competent as substantive evidence of the physician's incompetence, nor of negligence itself, but only of notice to the defendant that he was considered as unskilful The information came to the defendant under oath, and therefore was most solemnly imparted to it, and the jury found that he was incompetent before this transaction With these facts within its knowledge, the defendant should have proceeded more cautiously Some latitude is necessarily allowed in proof as to notice or knowledge This court has held that while such company was under no obligation to furnish a physician to its employees when it assumed to do so the duty arose to exercise due care in selecting him and in continuing him in its service

Physician Not Liable for Death of Other Child

(Skillings v Allen (Minn) 180 N W R 916)

The Supreme Court of Minnesota, in affirming an order denying the plaintiff a new trial after a verdict had been directed in favor of the defendant, says that the plaintiff, an employee of a mining company, lived with his wife and seven children in a one-room house The defendant was the company physician and had a hospital The plaintiff called the defendant to attend one of his children, named Alice, who was found to be suffering from an attack of pneumonia As the plaintiff's house was too small and crowded for her to receive proper care at home, she was taken to the defendant's hospital After about two weeks, the pneumonia was followed by scarlet fever, and about two weeks later she had recovered sufficiently to leave the hospital, and was taken home Before taking her home, her mother asked the defendant concerning the danger to the other children, and was informed that in his opinion Alice would not then communicate the disease About a week after Alice was taken home another child, named Glen, became sick and three days later died As administrator of his estate, the plaintiff brought this action alleging that the defendant in his capacity as a physician had negligently and wrongfully advised the plaintiff and his wife that Alice could be taken home without danger of communicating scarlet fever to the other children, that in reliance on this advice they took her home, that she was then at the desquamation stage of the disease and very likely to communicate it to others, that she did communicate it to Glen, and that he died from it The parents did not call a physician during Glen's sickness, deeming it not serious, but immediately after his death called a physician who found two of the other children sick with scarlet fever That physician reported the death of Glen to the health authorities, giving scarlet fever as the cause of death, but on the witness stand the physician stated that he could give no opinion as to the cause, as he did not attend the child and made no necropsy The mother testified that when the defendant informed her that Alice had scarlet fever at the hospital, Alice was broken out with a fine, red rash, that all of the children had had the same rash in the home, that Alice was the first to have it, and had it about two weeks before she was taken to the hospital, that all but two of the children had it before Alice went to the hospital, and had it twice, that the other two, Glen and another, first had it while Alice was at the hospital, and that she observed no difference between the symptoms of the disease which Alice had at the hospital and the symptoms of the disease which the children had in the home There was no other evidence as to the disease which the children had in the home At the trial, when the plaintiff rested, the defendant also rested, without presenting any evidence The burden was on the plaintiff to show that Glen died of scarlet fever, that he contracted the disease from Alice, and that he contracted it from her in consequence of the negligent performance by the defendant of his duties as a physician While a jury might, perhaps legitimately infer from the facts and circumstances that Glen died of scarlet fever, it could not legitimately infer that he contracted the disease from Alice after her return from the hospital rather than from some of the other children, or from some other source The evidence would not sustain a finding that Glen contracted the disease from which he died through the negligence of the defendant

Damages Allowed for Loss or Injury of Leg

(Powell v Kansas City Rys Co (Mo) 226 S W R 916)

The Supreme Court of Missouri, Division No 1, says that it has always considered that $10 000 for the loss of a leg was a good round consideration The evidence showed that the chief injury sustained by the plaintiff was a broken leg above the knee and that her leg was from 1 inch to 1½ inches shorter than the other, and that as a result she limped slightly, but otherwise had perfect use of the leg It went without saying that she was far better off than she would have been had she lost the leg The court is therefore of the opinion that $8 000 was ample consideration under the circumstances, and affirms the judgment in her favor on condition that she remit $4,000 therefrom the amount for which it was rendered being $12,000, which itself was a reduction from $15 000 awarded by the jury and at first approved by the trial court

Interest on Expenses for Physician and at Hospital

(First Wisconsin Trust Co v Schmidt (Wis) 180 N W R 832)

The Supreme Court of Wisconsin says that this action was brought by the company as executor to recover damages for personal injuries to and resulting death of a woman whom the defendant ran into with his automobile On the trial it was stipulated that the amount expended for hospital, physician and funeral expenses was $407 50 In entering judgment interest on this amount was allowed from the date of the accident to the time of entry of judgment, but the trial court was in error in allowing interest on these items Necessary reasonable expenditures for physician, hospital and burial were to be taken into consideration by the jury in determining the amount of damages which the plaintiff was entitled to recover But the damages did not become liquidated and fixed until the amount thereof was determined by a verdict The recovery here was not by way of implied contract to reimburse, but the expenditures were shown as an element of damage, because they were due to the negligent act of the defendant, for which he was liable The judgment should therefore be modified by deducting therefrom the amount of the interest erroneously allowed

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Obstetrics and Gynecology, St Louis

June 1921, 1, No 9

*Adenomyometritis Not Adenomyoma of Uterus L W Strong New York —p 901
Hyperemesis Gravidarum E Speidel Louisville —p 906
*Secondary Operations E L Dorsett St Louis —p 910
*Chronic Endocervicitis W T Kennedy New York —p 929
Chorea Gravidarum G D Royston St Louis —p 941
Entwining of Umbilical Cords in Single Amnion Twin Pregnancy S F Abrams St Louis —p 955
Ovary After Hysterectomy for Fibroids E M Hawks, New York —p 959
*Hemoglobin After Childbirth Resumption of Menstruation M P Rucker Richmond, Va —p 964

Adenomyometritis —Strong reviews the evidence for the purpose of determining whether we are justified in regarding the overwhelming majority of these conditions of the uterus as neoplasms rather than metritic hyperplasias The term adenomyoma denotes a neoplasm capable of unlimited growth, while hyperplasia may regress if the exciting cause is removed

How to Avoid Secondary Laparotomies —Dorsett advocates the removal of every appendix in women when the abdomen has been opened He believes that conservative measures are rather unsatisfactory when dealing with "cystic ovaries' and that conservative operative measures used in dealing with tubal infection should be abandoned

Chronic Endocervicitis —A partial review of the literature is made by Kennedy, and he discusses the surgical use of ethyl alcohol presenting a preliminary report of the treatment of endocervicitis with ethyl alcohol injected interstitially After drying the cervix and applying tr iodine to the vaginal portion, the cervix is grasped with a double tenaculum and from 1 to 2 c c of a 25 per cent solution of ethyl alcohol in distilled water is injected with an ordinary hypodermic needle attached by an adapter about 8 cm long to a record syringe into the anterior and posterior lips of the cervix parallel to the canal, care being taken not to penetrate a gland and thus lose the solution in the canal, because it has no value unless it be placed interstitially Hawks states that his observations indicate that it is better to leave ovaries and tubes after hysterectomy for fibroids done before or near the time of the menopause

Hemoglobin After Childbirth —Hemoglobin estimations were made by Rucker in seventy-four cases It would seem that hemoglobin is a deciding factor in the postpartum resumption of menstruation Immediately after delivery there is a definite drop in the hemoglobin from which the patient slowly recovers In the average cases menstruation begins when the hemoglobin reaches about 75 per cent Certain women menstruate with a much lower hemoglobin, and these are patients who have had some anemia for a long time Retrodisplacement with its pelvic hyperemia is also a factor in the early restoration of the menstrual phenomena

American Journal of Physiology, Baltimore

June 1 1921 56, No 2

*Studies on Cerebrospinal Fluid VII Volume Changes of Cerebrospinal Fluid after Epinephrin Pituitary Extract Pilocarpin and Atropin F C Becht and H Gunnar Chicago —p 231
Influence of Various Circulatory Conditions on Reaction to Low Oxygen of Rebreathing E C Schneider and D Truesdell Washington D C —p 241
Correlation Between Motor Control and Rifle Shooting R A Spaeth and G C Dunham Baltimore —p 249
Role of Intrinsic Plexuses in Determining Effects on Gastric Motility of Vagus Stimulation F T Rogers and Z Bercovitz Dallas Texas —p 257
Comparative Study of Ethanol Caffein and Nicotin on Behavior of Rats in a Maze D I Macht W Bloom and G C Ting Baltimore —p 264
Modification of Crossed Extension Reflex by Light Etherization and Its Bearing on Dual Nature of Spinal Reflex Innervation A Forbes, Boston —p 273
Blood Volume Studies V Carbon Monoxid Method —Its Accuracy and Limitations H R Arnold E B Carrier H P Smith and G H Whipple, San Francisco —p 313
Id VI Plasma Volume as Determined by Hemoglobin Injection F W Lee and G H Whipple San Francisco —p 328
*Id VII Comparative Values of Welcker Carbon Monoxid and Dye Methods for Blood Volume Determinations Accurate Estimation of Absolute Blood Volume H P Smith H R Arnold and G H Whipple —p 336
Experimental Studies on Regulation of Body Temperature IV Maintenance of Practically Uniform Temperature in Rabbits by Elimination of Random Movements L M Moore Berkeley Calif —p 361
Id V Temperature Effects of Different Concentrations of Sodium Chlorid Solution Intravenously Administered L M Moore Berkeley Calif —p 365

Volume Changes of Cerebrospinal Fluid —A method is described by Becht and Gunnar for measuring and recording graphically the amount of fluid in the skull under slightly less than the normal pressure Epinephrin does not increase fluid formation because by this method it can be shown that the fluid flows out of the canal during the pressor stage of the action but returns in equal amount while vascular readjustment is taking place In the same way it can be shown that neither pituitary extract nor pilocarpin increases fluid formation Atropin following pilocarpin may—but by no means always—produce increased arterial and venous pressure accompanied by an increase in the amount of fluid forced into the bottle The return of this fluid may be slow and tedious but finally takes place It is believed that this also is a purely mechanical change not accompanied by new formation

Three Blood Volume Methods Compared —Three standard blood volume methods are compared by the same workers under uniform conditions with a carefully controlled technic The dye method, the carbon monoxid method and a modified Welcker method were used on the same dog within a short space of time It was found that the dye method determines with reasonable accuracy the plasma volume but not the red cell volume The carbon monoxid or Welcker method determines the total hemoglobin or red cell volume but not the plasma volume The true total blood volume can be obtained by the use of the carbon monoxid method (red cell volume) plus the dye or similar method (plasma volume) The sum of these figures gives the true blood volume

Annals of Surgery, Philadelphia

June 1921 73, No 6

Gravimetric Method for Determining Superficial Area of Wounds B D Douglas New Haven Conn —p 673
*Acute Hematogenous Osteomyelitis F W Bancroft New York —p 681
Treatment of Open Infected Wound R J Behan Pittsburgh —p 701
*Recurrent Unilateral Subluxation of Mandible Excision of Interarticular Cartilage in Cases of Snapping Jaw A P C Ashhurst Philadelphia —p 712
*Treatment of Carcinoma of Tongue D Quick New York —p 716
Benign Stenosis of Esophagus N W Green New York —p 724
Mechanical Factors in Management of Recent Empyemas F S Mathews New York —p 735
Clinically Doubtful Breast Tumors Their Diagnosis and Treatment E I Bartlett San Francisco —p 740
Cultures from Appendix C E Farr New York —p 749
*Results of Treatment of Twenty Recent Cases of Intracapsular Fracture of Femur by Abduction and Plaster Fixation E C Murphy and G M Dorrance Philadelphia —p 752
Cancer of Large Intestine J I Russell New York —p 755

Acute Hematogenous Osteomyelitis —From clinical experience and animal experimentation Bancroft is convinced that in the future in the treatment of osteomyelitis in children, we can be more conservative Adequate drainage should be obtained with as little trauma as possible When the patient is clinically progressing favorably, bone, which by roentgen ray or gross examination appears dead, may frequently be saved to advantage in order to prevent deformity and hasten convalescence

Operation for Subluxation of Jaw —In a case of this type, Ashhurst made an incision under ether anesthesia over the zygoma 2 cm in length, backward to the auricle, thence downward for 3 cm in front of the auricle The masseter muscle was detached superiosteally and the small triangular flap of skin and muscle turned down The cartilage was easily identified, moving with the condyle of the mandible, but very loosely attached It was caught in a sharp tenaculum, and excised with scissors Bleeding was controlled by

a temporary gauze pack The incision was closed in layers, without drainage No luxation had occurred since the operation

Radium for Carcinoma of Tongue—In Quick's opinion the primary lesion in cancer of the tongue should be managed entirely by the use of radium Quick is convinced that this form of treatment in unselected cases will yield a higher percentage of clinical cures than will surgery alone in the selected operable group

Abduction Treatment of Fractured Head of Femur—The final results of the twenty cases recorded by Murphy and Dorrance show that nine patients have full function restored eight cases have slight impairment of function but all are capable of walking about Five use a cane One has complete absorption of the neck of the femur and a shortening of two and three-quarter inches and requires an elevation of the sole of her shoe which enables her to walk with the aid of a cane

Archives of Dermatology and Syphilology, Chicago

June 1921 3 No 6

Statistical and Histologic Studies of Fordyce s Disease A Margolies, Philadelphia —p 723
*Blastomycetoid Bodies in Sarcoma Like Tumor of Leg F D Weidman and H R Douglas Philadelphia —p 743
Impetigo Contagiosa Results of Cultures Made of Thirty Cases with Special Reference to the Character of Streptococci Isolated D L Farley and F C Knowles Philadelphia —p 753
Viability of Ringworm Fungi in Dry Cutaneous Material D L Farley Philadelphia —p 759
*Syphilitic Backache Symptom of Syphilis of Spinal Cord Lumbar Muscles and Vertebrae, Report of Ca es J V Klauder, Philadelphia —p 761
Infectivity and Survival of Spirochaeta Pallida in Rabbits with Observations on Some Strains from Latent Syphilis XXIII F Eberson St Louis —p 775
*Is Lupus Erythematosus Discoides Chronicus Due to Tuberculosis? W H Goeckerman Rochester Minn —p 788
Chemotherapy of Rhus Dermatitis and Tentative Method for Treatment J B McNair Washington D C —p 802

Blastomycetoid Bodies in Sarcoma-Like Tumor of Leg—A fungous growth on the leg clinically suspected as sarcoma was first regarded by Weidman and Douglas on histologic examination as lupus vulgaris Further study showed a vascular granulation tissue tubercle-like granulomas and blastomycetoid bodies Elastic fibers were found to have evoked foreign body giant cell production in both this and known cases of blastomycosis The cause of the lesion under consideration is left an open question, but it is insisted that the bodies" are higher fungi and not degenerative tissue products or concretions

Syphilitic Backache—Five cases are reported by Klauder Syphilitic backache is classified as a symptom of syphilitic involvement of the spinal cord, lumbar muscles and vertebrae In the majority of instances, it is a symptom of spinal cord syphilis Syphilitic backache, a symptom of syphilis of the spinal cord is meningeal in origin and due to irritation of the posterior sensory roots The symptom backache is a part of the meningeal syndrome These symptoms in general are essentially the same as those in other forms of meningitis Hyperesthesia is sometimes present, and the tendon and skin reflexes are increased In addition, there are symptoms of motor irritation Backache, stiffness and tiredness are the chief complaints of the patient Clinically, in addition to these neurologic abnormalities, there is rigidity of the back, combined with localized tenderness on percussion of the vertebral column Other objective evidences of neurosyphilis are usually present, since an isolated involvement of the spinal cord is exceptional The usual spinal fluid findings in this condition are given Case histories illustrating this type of syphilitic backache are presented A plea is made for a thorough history and clinical examination of every syphilitic order that treatment may be administered in the meningeal stage of neurosyphilis rather than in the parenchymatous stage

Etiology of Lupus Erythematosus Discoides—The tuberculous origin of lupus erythematosus discoides chronicus has not been proved by experimental work Clinical observation, including this statistical study by Goeckerman, seems to favor varied etiologic factors

Archives of Internal Medicine, Chicago

June 15 1921, 27 No 6

*Incidence and Histopathology of Tuberculosis of Tonsils C V Weller Ann Arbor, Mich —p 631
*Fatal Chronic Nephritis in a Fourteen Year Old Girl with Only One Kidney and a History of Scarlet Fever O H P Pepper and B Lucke Philadelphia —p 661
Liver Regeneration Following Chloroform Injury as Influenced by Feeding of Casein or Gelatin N C Davis and G H Whipple, San Francisco —p 679
Response of Circulation to Low Oxygen Tension A Sphygmographic Study of the Pulse During the Rebreather Test N C Gilbert Chicago and C W Greene Columbia Mo —p 688
*Use of a High Fat Diet in Treatment of Diabetes Mellitus Blood Sugar L H Newburgh and P L Marsh Ann Arbor Mich —p 699
New Methods for Estimating Enzymatic Activities of Duodenal Contents of Normal Man C W McClure, A S Wetmore and L Reynolds Boston —p 706
*Dermatitis and Allied Reactions Following Arsenical Treatment of Syphilis J E Moore and A Keidel, Baltimore —p 716
*Total Nonprotein Nitrogen Constituents of Blood in Arterial Hypertension J L Williams Chicago —p 748

Tuberculosis of Tonsils—Weller's paper is based on tonsillectomies The incidence of active tonsil tuberculosis in this series was found to be 2 35 per cent The range of ages was from 2 to 59 years Weller divides tonsil tuberculosis into three types focal crypt infections, ulcerative lupus-like lesions and diffuse miliary tuberculosis The crypt infection is the most common type, is usually unilateral, involves one or more crypt areas only and avoids the lymph follicles Some of these cases are autoinfections in open respiratory tract tuberculosis but the majority must be considered cases of primary focal tonsil tuberculosis The ulcerative lupus-like lesions result from the coalescence of crypt infections at the mouths of crypts or from direct extension from neighboring surfaces The diffuse miliary tuberculosis is usually a bilateral or, if the pharyngeal tonsil is examined a universal tonsil lesion The tubercles are widely scattered and occur almost exclusively in the follicles and germ centers This type can best be explained as a hematogenous miliary dissemination Mixed types occur, as in patients with open pulmonary tuberculosis, in which autoinfection may be associated with hematogenous miliary tuberculosis giving a combination of crypt infections with diffuse miliary tubercles

Fatal Chronic Nephritis Following Scarlet Fever—A clinicopathologic study is reported by Pepper and Lucke of a fatal case of renal disease in a 14 year old girl The clinical picture was that of a uremia terminating a chronic interstitial or glomerular nephritis All the usual evidences, both clinical and laboratory were present In addition there was a marked purpuric tendency The postmortem disclosed aplasia of the left kidney, histopathologic study of the small right kidney showed a combination of true chronic interstitial nephritis and chronic glomerulonephritis A remarkable degree of regeneration was seen, which, however, was morphologically and functionally insufficient (frustrated regeneration) An attempt to weigh the evidence concerning etiology leads to the tentative conclusion that this unusual picture was the result of the injurious action of scarlatina initiating a nephritis, which, because of the inadequate and possibly anomalous kidney present rapidly resulted in a condition analogous to chronic nephritis of adults

High Fat Diet in Diabetes Mellitus—In twenty-eight cases observed by Newburgh and Marsh, a high fat diet brought the blood sugar down to normal and kept it at that level during the period of observation Seven patients had a severe nephritis The blood sugar of each of these individuals was brought to a point well within normal limits Six cases show well the occurrence of hyperglycemia resulting from diets high in protein and the reduction of the blood sugar to within normal limits subsequent to the use of a diet low in protein and high in fat One case is especially instructive in this respect After four days on a diet containing 37 gm protein and 1,400 calories, the blood sugar was 0 135 per cent , after an increase of the protein to 50 gm , with a slight decrease in carbohydrate and total calories, a hyperglycemia of 0 195 per cent is noted A return to the formed diet brought the blood sugar down to 0 130 per cent while the substitution of the second diet again produced a hyperglycemia of 0 190 per cent In five cases response to treatment was not satisfactory

Reactions Following Arsenical Treatment of Syphilis—Of ten deaths at the Johns Hopkins Hospital due to the arsphenamins, two were cardiac (in patients with marked aortic and myocardial lesions), two were from causes unknown (probably impurity in the drug used), one was from acute yellow atrophy of the liver, and five were from reactions of the dermatitis group Among the twenty-three patients whose cases are reported by Moore and Keidel there were four whose reactions place them in the "mild group," and eighteen in whom there were twenty-one instances of severe reactions resulting in five deaths, a mortality of 27 7 per cent Most of the remaining thirteen patients with severe reactions were seriously and uncomfortably ill, and the average hospital stay exceeded a month Evidence is presented that the lesions of syphilis or the duration of the disease exercise no modifying influence upon the incidence of dermatitis Dermatitis has been observed to follow all chemotherapeutic arsenic compounds employed in the treatment of syphilis In the majority of these cases arsenic was the only drug employed so that mercury and potassium iodid as causative factors can be excluded Dosage, technic of administration, and impurities in the drug can be excluded as etiologic factors The complications of dermatitis exfoliativa including acute nephritis polyneuritis jaundice skin infection, bronchopneumonia, and septicemia, are discussed Attention is directed to the possible relation between the complication due to infection and the disturbance of hematopoiesis The literature is reviewed and the possible etiologic facts in reactions of this group are discussed The evidence is in favor of their anaphylactic origin

Nonprotein Nitrogen of Blood in Arterial Hypertension—Williams claims that there is a disease arterial hypertension, which when uncomplicated by nephritis or cardiac decompensation gives no functional evidence of kidney insufficiency Cardiac decompensation with marked passive hyperemia of the kidneys is associated with a moderate retention of nonprotein nitrogen in the blood The height of the blood pressure bears no relationship to the amount of the nonprotein nitrogen substances in the blood Arterial hypertension with normal nonprotein nitrogen values in the blood and normal kidney excretion determined by functional tests and urine examinations, does not justify the clinical diagnosis of chronic nephritis

Archives of Neurology and Psychiatry, Chicago

June 1921 5 No 6

*Family Spastic Paralysis of Spinal Type on Heredosyphilitic Basis G Mingazzini Rome, Italy—p 637
*Pathogenesis of Epilepsy from Historical Standpoint with a Report of an Organic Case M Kasak Madison Wis—p 645
Global Aphasia and Bilateral Apraxia Due to Endothelioma Compressing Gyrus Supramarginalis F Bremer Brussels Belgium—p 663
Revival of Spiritism Psychologic Facts C B Farrar Ottawa Canada—p 670
*Blood Sugar Studies in Dementia Praecox and Manicdepressive Insanity T Raphael and J I Parsons Ann Arbor Mich—p 687
Serology of Spinal Fluid and Blood in Epidemic Encephalitis W M Kraus and I H Pardee New York—p 710

Spastic Spinal Paralysis on Heredosyphilitic Basis—Three cases occurring in two brothers and a sister, the offspring of a syphilitic father are recorded by Mingazzini The father was a tabetic patient the history and clinical findings were typical With the exception of the first-born all his children were more or less deficient all three at about the same age (at puberty) began to suffer from progressive motor disturbances of the lower extremities terminating in the syndrome of family spastic paralysis (spinal type) One of the brothers also suffered from optic atrophy, choroiditis and double cataract. Cases in the literature are reviewed

Pathogenesis of Epilepsy—In Kasak's case the symptoms were those of idiopathic epilepsy, and in the necropsy revealed a frontal lobe tumor a psammoma

Blood Sugar Studies in Dementia Praecox—On the basis of the data secured in the experiments, employing the Benedict modification of the Lewis-Benedict method for blood sugar, Raphael and Parsons state that tolerance curves differ from those obtained in normal individuals, in cases of hypomaniac depressed phases of manic depressive insanity and in cases of dementia praecox, that among the pathologic groups studied there were striking differences among the different groups, that in each clinical group, the curves had features in common that suggest a type curve that among cases of dementia praecox, tolerance curves vary according to the phase of the clinical course

Boston Medical and Surgical Journal

June 16 1921 184 No 24

Treatment of Cancer F Bryant Worcester Mass—p 615
Treatment of Tumors by Roentgen Rays and Radium R B Greenough Boston—p 622
*Visceroptosis as Cause of Stomach Trouble W D Reid Boston—p 628
Essential Factors of Cancer Causation J W Shannon San Diego Calif—p 632
*Two Cases of Acaraphobia A. Myerson Boston—p 635
Recent Progress in Proctology T C Hill Boston—p 638

Visceroptosis as Cause of "Stomach Trouble"—Cases of visceroptosis presenting "stomach symptoms" are cited by Reid A lack of good physical development and subnutrition are commonly associated with the condition The diagnosis is based on evidence obtained in the history physical and roentgen-ray examinations Organic disease should be excluded in these and by suitable laboratory tests Treatment should be directed toward the patient's mental condition, his subnutrition, and his mechanical handicaps

Acaraphobia—In the two cases which Myerson reports the psychosis in each case was definitely associated with skin disease in the one case with leukoderma or vitiligo and in the other with a lesion resembling leukoderma but differing from it in its extraordinary transiency One patient presented a pseudoparanoid psychosis of slow evolution while there developed in the other case a hallucinosis and confusion associated with profound bodily disturbances

June 23 1921 184 No 25

*Congenital Malformations of Vertebrae N Mills New York—p 689
Principles of Posture with Special Reference to Mechanics of Hip Joint M E Todd Boston—p 667

Congenital Malformations of Vertebrae—A study of the abnormalities of the vertebrae, as revealed in roentgenograms of 100 consecutive cases of scoliosis shows that they are of quite common occurrence and frequently the cause of scoliotic deformity Forty per cent of the cases in this series had some abnormality at the lumbosacral junction as the apparent cause of their deformity Therefore, Mills says, it is advisable to make a careful roentgen-ray study of all cases of scoliosis as these cases need treatment directed at the primary asymmetry which occurs in the lumbosacral junction The attempt may be made to correct this asymmetry by exercises If jackets are used their object must not be primarily to correct the curve but to correct the asymmetry which is the cause of that curve If an operative procedure is used to stiffen the spine, the result will not be completely satisfactory unless a normal relation is first restored at the lumbosacral junction and this relation fixed by fusion

Journal of Biological Chemistry, Baltimore

June 1921 47 No 1

Preparation of Galactose E P Clark Washington D C—p 1
*Absorption of Calcium Salts in Man E H Mason Montreal Canada—p 3
*Dinitro salicylic Acid A Reagent for Estimation of Sugar in Normal and Diabetic Urine J B Sumner and V A Graham Ithaca N Y—p 5
Gasometric Determination of Nitrogen R L Stehle Philadelphia—p 11
*Gasometric Determination of Urea in Urine R L Stehle Philadelphia—p 13
Further Improvements in Nephelometer Colorimeter P A Kober and R E Klett, New York—p 19
Substitution of Turbidimetry for Nephelometry in Certain Biochemical Methods of Analysis W Denis New Orleans—p 27
Creatinuria II Arginin and Cystin as Precursors of Creatin E G Gross and H Steenbock Madison Wis—p 33
Creatinuria III Effect of Thyroid Feeding on Creatinuria E G Gross and H Steenbock Madison Wis—p 45
Distribution of Phosphoric Acid in Blood of Normal Infants G M McKellips I M De Young and W R Bloor Berkeley Calif—p 53
Determination of Inorganic Sulphate Total Sulphate and Total Sulphur in Urine by Benzidine Method C H Fiske Boston—p 59
*Basil Metabolism of Normal Women K Blunt and Marie Dye Chicago—p 69
*Fat Soluble Vitamin and Yellow Pigmentation in Animal Fats with Some Observations on Its Stability to Saponification H Steenbock M Sell and M V Buell Madison, Wis—p 89

Supplementary Protein Values in Foods I Nutritive Properties of Animal Tissues E V McCollum N Simmonds and H T Parsons, Baltimore —p 111
Id II Supplementary Dietary Relations Between Animal Tissues and Cereal and Legume Seeds E V McCollum, N Simmonds and H T Parsons Baltimore —p 139
Id III Supplementary Dietary Relations Between Proteins of Cereal Grains and Potato E V McCollum N Simmonds and H T Parsons Baltimore —p 175
Id IV Supplementary Relations of Cereal Grain with Cereal Grain Legume Seed with Legume Seed, and Cereal Grain with Legume Seed with Respect to Improvement in Quality of their Proteins E V McCollum N Simmonds and H T Parsons Baltimore —p 207
Id V Supplementary Relations of Proteins of Milk for Those of Cereals and of Milk for Those of Legume Seeds E V McCollum, N Simmonds and H T Parsons —p 235

Absorption of Calcium Salts in Man—Two calcium salts, the lactate and the chlorid, were used by Mason A single large dose of calcium lactate influences the plasma values little Calcium chlorid seems to be absorbed better and shows more consistent increases in the plasma values Its solution in weak hydrochloric acid does not affect its rate of absorption

Dinitrosalicylic Acid for Estimation of Sugar in Urine—Using dinitrosalicylic acid as a reagent, Sumner has found a way to obtain the true values for the sugar in normal urine as follows 1 c c of urine is heated in boiling water with 1 c c of 3 per cent sodium hydroxid for fifteen minutes This treatment destroys the reducing sugars completely, provided the amount present is less than 1 mg Either 0 5 or 1 mg glucose, depending on the quantity of glucose estimated to have been present originally, is now added to the cooled solution, after which 1 c c of dinitrosalicylate solution is added and the test tube heated for five minutes Any reduction exceeding that given by the added glucose is caused by substances which are not sugars The reducing value of these substances is subtracted from the total reducing value of the urine giving the value for sugar by difference It has been found that the quantity of glucose added must be approximately equal to the amount destroyed by heating with alkali, otherwise an error is introduced

Gasometric Determination of Urea in Urine—A method for determining urea in urine is described by Stehle which is both brief and accurate Ammonium salts are removed by treating the urine with permutit and the ammonium-free solution is then subjected to the action of sodium hypobromite in the vacuum obtained with a Van Slyke carbon dioxid apparatus Nitrogen is liberated quantitatively from the urea [illegible] to an entirely negligible extent from other urinary constituents

Basal Metabolism of Normal Women—The basal metabolism of seventeen women, fourteen of them including one or more menstrual cycles, and one being observed for twenty-six almost consecutive days was studied by Blunt and Dye There is no definite change in the basal metabolism during menstruation The average of the intermenstrual and menstrual observations is almost the same, and no rhythmical periodic variation in metabolism can be noted The daily variation for each subject is great, ranging from 7 4 to 28 8 per cent There is no relation between minimum pulse rate and basal metabolism neither is there definite constant change in the pulse rate during menstruation

Fat Soluble Vitamin and Yellow Pigmentation in Animal Fats—In cod liver oil there is present a very high concentration of the fat soluble vitamin with but small amounts of yellow pigments Butter fat shows a seasonal variation in the fat soluble vitamin content when obtained from stall fed cows during the winter and pastured in the summer The fat soluble vitamin content of butter fat does not run closely parallel to the yellow pigment, yet in general, due to determination by their content in the feed, butters highly pigmented are rich in the vitamin, butters low in pigment should be looked upon with suspicion In beef fats the relations are somewhat similar, those most pigmented are also generally richest in their fat soluble vitamin content The fat soluble vitamin withstands severe methods of saponification This indicates that it is not a fat and probably not an ester and makes possible the compounding of satisfactory fat free synthetic rations for investigative purposes

Journal of Experimental Medicine, New York

June 1 1921 **33**, No 6

*Useful Heart Method C K Drinker Boston —p 675
Improved Anaerobe Jar J H Brown, Princeton N J —p 677
*Etiology of Yellow Fever A E Cohn and H Noguchi, New York —p 683
*Chemotherapeutic Studies with Ethylhydrocuprein Hydrochlorid in Experimental Pneumococcus Pleuritis J A Kolmer and J R Sands Philadelphia —p 693
*Experimental Studies of Nasopharyngeal Secretions from Influenza Patient P K Olitsky and F L Gates New York —p 713
*Biliary Obstruction Required to Produce Jaundice P D McMaster and P Rous New York —p 731
*Tuberculin Hypersensitiveness in Nontuberculous Guinea Pigs Induced by Injections of Bacillus Free Filtrates F A McJunkin, St Louis —p 751
Studies on Bacterial Nutrition T Thjotta New York —p 763
Dissociation of Microbic Species P H de Kruif New York —p 773
*Decreasing Reaction of Normal Skin to Destructive Doses of Roentgen Rays by Pharmacologic Means Mechanism Involved J Auer and W D Witherbee New York —p 791
*Effect of Small Doses of Roentgen Rays on Hypertrophied Tonsils and Other Lymphoid Structures of Nasopharynx J B Murphy W D Witherbee S L Craig R G Hussey and E Strum —p 815

Useful Heart Method—Drinker describes a procedure in which the heart is exposed and the breathing is normal It is used for experimental work only

Heart Symptoms in Experimental Yellow Fever—Slowing of the heart occurred in monkeys and guinea-pigs during the febrile period of the experimental infection due to *Leptospira icteroides* A similar reaction took place in animals inoculated with *Leptospira icterohaemorrhagiae* The mechanism of slowing was usually due to slowing of the whole heart On one occasion incomplete heart block was seen by Cohn and Noguchi Changes in the ventricular complex occurred four times

Ethylhydrocupreine in Experimental Pneumococcus Pleuritis—Solutions of ethylhydrocuprein (optochin) hydrochlorid showed a pronounced bactericidal activity for pneumococci in pleural pus The injection of 1 c c of 1 500 solutions of ethylhydrocuprein hydrochlorid into each pleural cavity of guinea-pigs at varying intervals up to twenty-four hours after pleural infection has usually shown a marked curative influence Similar results were observed with dogs The intrapleural injection of mixtures of ethylhydrocuprein sodius oleate, and boric acid (Lamar) has also shown a decided curative effect in acute suppurative pneumococcus pleuritis of guinea-pigs These and similar experiments on pneumococcus meningitis made by Kolmer and Sands suggest that in chemotherapeutic investigations certain drugs may be injected into serous cavities in amounts exerting distinct bactericidal activity in vivo without producing local irritation or general toxic effects

New Bacterium in Influenza—From the filtered nasopharyngeal washings of patients in the first thirty-six hours of uncomplicated epidemic influenza and rarely in later stages of the disease Olitsky and Gates have cultivated a minute bacilloid body, *Bacterium pneumosintes,* from 0 15 to 0 3 microns in length, of constant cultural characters and capable of indefinite propagation on artificial mediums This organism not of the nature of ordinary bacteria, was also recovered in pure culture from the unfiltered and filtered lung tissue of rabbits and guinea-pigs inoculated with unfiltered and filtered nasopharyngeal washings of early influenza cases, both from the first epidemic of 1918-1919 and from the second one in 1920 The organism grows only under strictly anaerobic conditions passes Berkefeld V and N filters, and withstands the action of sterile 50 per cent glycerol for a period of months It has been recovered from cultures contaminated with a variety of ordinary bacteria such as *Bacillus pfeifferi,* pneumococci, streptococci and staphylococci, and has been cultivated experimentally in symbiosis with them The intracheal injection in rabbits and guinea-pigs of mass cultures of this organism has induced effects on the blood and lungs of these animals which are not to be distinguished from those obtained with the nasopharyngeal secretions of patients in the early hours of epidemic influenza From the pulmonary lesions thus induced, the same organism has been recovered in pure culture, and has been found to cause similar lesions on subsequent animal passage Its pathogenicity is not lost by prolonged artificial cultivation

Biliary Obstruction in Jaundice—McMaster and Rous state that the clinical jaundice encountered in association with local liver lesions should be viewed not as the result of local bile resorption, but as due to a general injury to the hepatic parenchyma or ducts, or to blood destruction

Tuberculin Hypersensitiveness—Hypersensitiveness of tissues of a tuberculous animal to tuberculin provides a means of diagnosis in tuberculosis McJunkin found death occurs within twenty-four hours or the animal becomes extremely toxic Such a peritoneal tuberculosis develops in about one month after 1 c c of a very heavy suspension of the same culture has been introduced into the abdominal cavity If the viscid fluid which is contained within the peritoneal cavity is mixed with saline solution and passed through a Berkefeld filter a bacillus-free filtrate is obtained which induces in normal guinea-pigs a certain degree of cutaneous hypersensitiveness to tuberculin The abdominal organs and the parietal peritoneum to which masses of leukocytes and tubercle bacilli are adherent, when crushed and extracted with saline solution yield a filtrate which likewise induces a cutaneous hypersensitiveness The cutaneous hypersensitiveness does not appear before the seventh or eighth day after the filtrate injection, and is, therefore, considered to be the result of an active sensitization of the animal

Skin Tolerance to Roentgen Rays—From the experimental facts obtained by Auer and Witherbee it is evident that the skin of rabbits under certain conditions may acquire a remarkably increased resistance to doses of roentgen rays which are surely destructive to control animals These conditions are that the animal whose skin tolerance to roentgen rays is to be increased must be sensitized with horse serum and this sensitization must take place before the rabbit is exposed to the roentgen rays

Roentgen-Ray Therapy of Diseased Tonsils—Forty-six individuals with tonsils both hypertrophied and otherwise pathologically altered and some of whom had in addition adenoid masses and lymphoid deposits posterior to the pillars of the fauces were given exposure to roentgen rays In all but four cases the treatment was followed by marked atrophy of the tonsils and the other lymphoid deposits, attended by an opening and drainage of the tonsillar crypts As this process progressed the previously enlarged tonsils assumed a smooth and normal appearance, and the hemolytic bacteria —streptococci and staphylococci chiefly—which were often present in the affected tonsil disappeared usually within four weeks of the treatment

Florida Medical Association Journal, St Augustine and Jacksonville

May 1921, 7 No 11

Preventive Medicine and Trend of Practice W P Adamson Tampa —p 190
Masochism N M Owensby Atlanta Ga —p 193

Journal of Pharmacology and Experimental Therapeutics, Baltimore

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Toxicity of Some Thioureas and Thiuramdisulphids P J Hanzlik and A Irvine Cleveland —p 349
*Quantitative Studies in Chemotherapy V Intravenous Versus Intramuscular Administration of Arsphenamin Curative Power and Minimum Effective Dose C Voegtlin and H W Smith Washington D C —p 357
*Action of Drugs in Infection I Influence of Morphin in Experimental Septicemia A Kraft and N M Leitch Chicago —p 377
*Salicylates VIII Liberation of Free Salicylic Acid from Salicylate in Circulation P J Hanzlik Cleveland —p 385
*Epinephrin Hyperglycemia I A L Tatum Chicago —p 395
*Effect of Benzyl Benzoate on Leukocytes of Rabbit L A Emge and J P Jensen, San Francisco —p 415

Intramuscular Administration of Arsphenamin and Neo-Arsphenamin—As the result of a considerable study, Voegtlin and Smith claim that the intramuscular administration of arsphenamin and neo-arsphenamin in just as efficacious as the intravenous administration of these drugs in the treatment of experimental trypanosomiasis as judged by both the minimum effective dose and the percentage of survivals of treated animals The significance of this point in the treatment of human syphilis is discussed The ratio of the minimum lethal dose to the minimum effective dose is a substantial index to the curative power of a given drug under experimental conditions

Morphin in Septicemia—Kraft and Leitch state that morphin sulphate given in 0 03 gm (0 5 grain) doses, which is from one-sixth to one-tenth fatal dose, lowers the resistance of rabbits toward septicemia produced by *Streptococcus hemolyticus* Morphin sulphate, given as above lowers the temperature of rabbits In the administration of morphin at least two effects should be considered first, the sedative action of morphin, second, the influence of morphin on the course of infection The harmful influence of morphin is probably due to a number of factors, such as inhibition of phagocytosis, increase in intestinal stasis, with the increased production of toxins and a general depression of the body temperature, of metabolism and the body defense

Liberation of Free Salicylic Acid from Salicylates—Hanzlik's observations have shown that free salicylic acid is demonstrably liberated from sodium salicylate at a very low degree of acidity namely, an acidity whose hydrogen-ion concentration corresponds to $p_H - 6.7$, more definitely at $p_H - 6.5$ The presence of 25 per cent serum or plasma in salicylate "buffer" mixture prevents the liberation of free salicylic acid at the degree of acidity of $p_H - 5.9$ Therefore it is improbable that free salicylic acid could be demonstrated in the circulation during life This was fully confirmed by Hanzlik on animals subjected to fatal asphyxia and whose cardiac and arterial bloods were rendered very slightly acid ($p_H - 6.8$ or 6.9) Consequently, the theory that free salicylic acid, liberated by virtue of the greater carbon dioxid content of venous blood of the right heart exerts an antiseptic action and prevents the development of a right sided auriculoventricular (tricuspid) endocarditis in rheumatic fever is untenable

Epinephrin Hyperglycemia—From a study of all available evidences in the literature together with data obtained by him Tatum concludes that epinephrin glycogenolysis cannot be satisfactorily explained on the basis of hepatic asphyxia or acidosis The real mechanism of epinephrin mobilization of carbohydrates therefore is as yet undetermined

Effect of Benzyl Benzoate on Leukocytes—The experimental work done by Emge and Jensen showed that in rabbits a continuous administration of benzyl benzoate in small doses leads to a leukocytosis which in somewhat larger doses is accompanied by an increase in small mononuclear cells This leukocytosis is transient and ultimately ends in a late mild leukopenia In other words, the behavior of the blood picture suggests also that if it is due to some form of benzol or some intermediate product, such substance is of importance only after a sufficient amount of benzyl benzoate has accumulated in the system In large but single doses of benzyl benzoate there is a tendency to change the even rise of the leukocytes into a broken curve of a diphasic character with a distinct depression of the polymorphonuclear element Also here the mild and late leukopenia occurs The changes in the blood curve are not dependent upon the method of the administration of the drug In a very large, single, but not fatal dose the primary rise of the leukocytes does not occur necessarily but the blood curve assumes more of the leukopenia character, of the benzol curve This leukopenia presents also here a diphasic polymorphonuclear picture In the presence of latent or quiescent infections in rabbits larger doses produce an acute return of the disease This is accompanied by sharp rises and sudden drops in the total as well as the small mononuclear white blood cells (actual lymphocytosis) A leukopenia was not observed when the recrudescence was very violent but when the recrudescence took a milder course there also was a suggestion of a late leukopenia The flaring up of an infection in rabbits during benzyl benzoate therapy suggests a similarity to the action of benzol under similar circumstances These data are in direct contradiction of those of Heller and Steinfield

Military Surgeon, Washington, D C

May 1921 **48**, No 5

Medical Department Program of Hospitalization and Evacuation of an Army in Preparation for Battle A N Stark —p 493
Reconstruction Work in United States Army Hospitals W J Tindall —p 503

Anaphylaxis and Serum Sickness—Serum Allergy A P Hitchens—p 511
Malingering and Simulation of Disease in Warfare T A Williams Washington D C—p 520
Posting and Reporting Water Supplies E J Theriault—p 534
Water Supply for Railroad Transport Service C T Male—p 540
Chlorination of Water Supplies W C Russell—p 544
Water Supply Surveys H B Hommon—p 550
Hemolytic Streptococcus Throat Surveys at Army Recruit Depots J E Walker—p 561
Study of Army Ration and Its Relation to Height and Weight of Soldiers in Army Cantonments L A Congdon—p 569
Malarial Fevers R W Mendelson—p 581

Minnesota Medicine, St. Paul

June 1921 **4**, No 6

Reconstructive Surgery H E Mock Chicago—p 343
Unsettled Problems in Management of Renal Tuberculosis H Cabot Ann Arbor Mich—p 354
Denudation of Inoperable Cancer, an Aid for Efficient Radiotherapy E G Beck Chicago—p 360
Fifty Consecutive Cataract Operations by Smith Indian Fisher Method F J Pratt and J A Pratt Minneapolis—p 370
*Relation of Hepatitis to Cholecystitis W C MacCarty and A Jackson Rochester Minn—p 377
Physical Signs of Early Pulmonary Tuberculosis J W Bell Minneapolis—p 382
Classification and Symptomatology of Pulmonary Tuberculosis F W Wittich Minneapolis—p 384
Roentgen Ray Diagnosis of Tuberculosis F S Bissell Minneapolis—p 388
Spasmodic Stenosis of Esophagus E B Freeman Baltimore—p 390
*Saligenin, a New Nontoxic Local Anesthetic and Its Mercury Derivative a New Antiseptic A D Hirschfelder Minneapolis—p 399

Relation of Hepatitis to Cholecystitis—Chronic cholecystitis is very frequently if not always associated with chronic hepatitis MacCarty says that the general obscure symptoms which frequently occur in association with cholecystitis may have their origin in chronic disturbances of hepatic functions The presence of chronic hepatitis in association with chronic cholecystitis may account for the recurrence of symptoms following a certain percentage of cholecystectomies and cholecystostomies

Saligenin, a New Nontoxic Local Anesthetic—Saligenin is the alcohol corresponding to salicylic acid and is oxidized to salicylic acid in the body It is formed in nature by the splitting up of the glucoside salicin by the enzyme emulsion and it can be prepared synthetically in various ways Hirschfelder says it has been found that saligenin is distinctly less irritant to the tissues than benzyl alcohol and that it is much more certain in its action For ordinary purposes of inflation anesthesia a 2 per cent solution is satisfactory It is water soluble up to 10 per cent. and is from five to ten times less toxic than procain and from twenty-five to fifty times less toxic than cocain Judging from results on the dog and cat (from 0 4 to 0 7 gm per kilogram) a man could tolerate up to 1 or 2 ounces of the solid drug or from 1,500 to 3 000 c c of a 2 per cent solution intravenously—or about 1 gallon subcutaneously Hirschfelder makes reference to the results obtained by various operators with saligenin as the anesthetic

New York Medical Journal

June 1 1921 **113**, No 15

Some Emotional Reactions in Epileptics L P Clark New York—p 785
Singultus H S De Brun New York—p 789
Case of Hysterical Aphagia A A Rutz Brooklyn—p 793
Sensory Aphasia E M Ellison Washington D C—p 796
Shaker Celibacy and Salacity Psychologically Interpreted T Schroeder Cos Cob Conn—p 800
Mental States Associated with Apoplexy and Allied Conditions A C Buckley Philadelphia—p 806
*Effect of Tobacco on Man W J Gies M Kahn and O V Limerick New York—p 809
Ataxic Paraplegia with Pernicious Anemia K A Menninger Topeka Kan—p 812
*Syphilis of Lungs Simulating Tuberculosis H M Minton Philadelphia—p 813
Lethargic Encephalitis as a Complication of Influenza B Frankel New York—p 815
Cases of Injury to Eyeball W L Pyle Philadelphia—p 816
Cases of Foreign Body in Larynx and Esophagus J Friedman and S D Greenfield Brooklyn—p 818
Marie Curie D Waterson New York—p 820

Effect of Tobacco on Man—The authors claim that the habitually moderate use of tobacco is not harmful to adults, the moderate use of tobacco proves distinctly helpful to certain adult types, the habitually excessive use of tobacco may prove harmful to certain individuals, but the same holds equally true of all foods, the excessive use of tobacco may prove harmful in certain neurovascular disorders, the habitual use of tobacco by juveniles is harmful Tobacco does not cause disease of either mind or body

Syphilis of Lungs—Minton has noted cases which to the casual observer might have been diagnosed as pulmonary tuberculosis, but, after investigation, have proved to be syphilis of the lungs He believes that there are many cases of this disease being treated for pulmonary tuberculosis, and urges more frequent use of Wassermann and other blood tests in cases with signs and symptoms of active tuberculosis but not giving positive sputum This should be done whether a history of a primary syphilitic lesion is obtainable or not

June 15 1921 **113**, No 16

Roentgen Ray Therapy in Superficial Malignancy W H Meyer New York—p 845
Reciprocal Influence of Influenza and Epilepsy A Gordon Philadelphia—p 849
Sociological Training of Epileptics L P Clark New York—p 851
Nervous Patient from Viewpoint of Vegetative Neurologist F H Reede Washington D C—p 853
Vertigo from Point of View of Otologist W A Wells Washington D C—p 859
Visual Errors in General Practice L H Schwartz New York—p 862
Diagnostic Value of Pupil in General Medicine J H Bailey Brooklyn—p 864
Eye Strain in Every Day Practice A Bray, Philadelphia—p 869
*Serum Treatment of Lobar Pneumonia W L Niles New York p 871
Rectal Tract as Source of Focal Infection H Goldman New York p 873
Hay Fever Report on Successful Detoxication Method of Treatment G L Renaud Detroit—p 875
Lure of Cathartic Giving J C O Day Honolulu—p 878

Serum Therapy of Pneumonia—Niles endorses the serum therapy of pneumonia He urges that an exact etiologic diagnosis should be quickly made in every patient suffering with lobar pneumonia With very few exceptions Type I pneumococcus infections should be treated with Type I antipneumococcus serum The serum should be given in large doses (generally 100 c c) and repeated every eight hours until the temperature falls and remains below 102 F, if it subsequently rises the administration of serum should be repeated unless complications, which should always be suspected, are determined The serum treatment should be commenced as early as possible, it should reach the vein at about the body temperature and the first 15 c c should be given slowly Polyvalent serum should never be given and Type I serum should be administered only to proved Type I infections Serum treatment reduces the mortality of Type I infection more than 50 per cent

Northwest Medicine, Seattle

June 1921 **20**, No 6

Diagnosis of Chronic Cholecystitis K Winslow Seattle—p 145
Clinical Application of Blood Chemistry R F E Stier and G Hollister Spokane—p 148
Case of Acute Lymphatic Leukemia B N Wade Portland Ore—p 152
*Dermatitis Exfoliativa Following Injections of Arsenical Preparations Intravenously G S Whiteside Portland Ore—p 153
*Case of Bilateral Thrombosis of Lateral Sinuses Not Originating from Otitis R. A Fenton Portland Ore—p 155

Dermatitis Exfoliativa Following Arsenic Injections—In Whiteside's three cases the urine and blood pressure were normal Two of the patients were in the secondary stage of syphilis, one patient showing signs of neurosyphilis only, none with cutaneous or mucous membrane lesions One was given mercury simultaneously, the other two received none No unusual reaction to the arsenic at time of or immediately following the administration was noted Injections were given once a week In one case the dermatitis followed the second dose within three days, in the other two cases it followed the third or fourth dose after an interval of two or three weeks In one case there was fever, prostration and all the classical symptoms while the other two patients never were confined to bed and had normal temperatures throughout In one case neo-arsenobenzol was given, in one arsenobenzol, and in one arsphenamin

Bilateral Thrombosis of Lateral Sinuses Not Originating from Otitis—In Fenton's case there was an abscess extending

vertically about 8 cm from the left orbital roof and diagonally across the longitudinal sinus eroding the inner surface of the bone There was also a vast amount of pus filling the dural cavity and compressing the left cerebral hemisphere Pus had burrowed through the roof of the orbit and traveled out toward the zygoma to appear under the eyebrow Complete and organized thrombosis of the right lateral and sigmoid sinuses, extending down into the jugular, and incomplete organized thrombosis of the left sigmoid sinus and jugular had occurred Hundreds of abscesses were found in the lungs, there was bilateral coalescing bronchopneumonia, marked acute hemorrhagic and fibrinous pleurisy, acute tracheobronchial lymphadenitis, and marked cloudy swelling of the parenchymatous organs A hemolytic streptococcus was the chief organism involved

FOREIGN

Titles marked with an asterisk (*) are abstracted below Single case reports and trials of new drugs are usually omitted

Annals of Tropical Medicine and Parasitology, Liverpool

April 27 1921 **15**, No 1

Scientific Record D Allmand —p 1
Arneth Count in Hookworm Infected White Children in North Queensland A Breinl —p 49
*Bronchomoniliasis Complicating Pulmonary Tuberculosis in a Native of Gold Coast West Africa J W S Macfie and A Ingram —p 53
Case of Indigenous Infection with P Falciparum B Blacklock —p 59
Mosquitoes in Isle of Man B Blacklock and H F Carter —p 73
Some Unusual Breeding Places of Stegomyia Fasciata Fabr in Australia G F Hill —p 91
Musca Domestica Linn as a Bush Fly in Australia G F Hill —p 93
New Tsetse-Flies (Glossina) from Belgian Congo R Newstead and A M Evans —p 95
On a Collection of Papuataci Flies (Phlebotomus) from India R Newstead and J A Sinton —p 103

Bronchomoniliasis Complicating Tuberculosis —A case is recorded by Macfie and Ingram in which bronchomoniliasis complicated pulmonary tuberculosis in a native of the Gold Coast at Accra The patient died of an hemoptysis At the postmortem examination both lungs were found to be tuberculous The left lung was collapsed, and the pleural cavity partially filled with exudate In this exudate and in the thickened pleura over the lung Monilia was present. The organism, which belonged to the Tropicalis group of Castellani and Chalmers, closely resembled in biochemical reactions *M nivea* Cast (1910)

Archives of Radiology and Electrotherapy, London

May, 1921 **25**, No 12

Calcification in Angioma C P G Wakeley —p 363
Effect of Increased Protection from Radiation upon Blood Condition of Radium Workers J C Mottram —p 368
Case of Cancer of Portio Vaginalis Treated with Roentgen Rays Mathes and Staumig —p 373
Effects of Roentgen Rays on Lymphocytes S Russ H Chambers and G Scott —p 377
Case of Acute Aplastic Anemia F E Larkins —p 380
Actinomycosis Treated with Radium S A Heyerdahl —p 382
Case of Long Lasting Suppuration of Nasal Sinuses Successfully Treated by Galvanic Current C A. Robinson —p 386

British Medical Journal, London

May 28 1921 No 3152

*Clinical Study of Three Cases of Heart Block T W Griffith —p 763
Capillary Pressure and Edema L Hill —p 767
Dual Radiotherapy in Malignant Disease S G Scott —p 771
Treatment of Sleeping Sickness C H Marshall and S M Vassallo —p 773
Virulence of Diphtheria Like Organisms A J Eagleton and E M Baxter —p 775
*Lingual Application of Iodin as Prophylactic in Cerebrospinal Meningitis and Influenza J A Taylor —p 776
Bilateral Hypoglossal Palsy Due to Gunshot Wounds H Burrows —p 776

Heart Block —In the first cited by Griffith, a block which remained complete for a long period suddenly broke into a two to one block and ultimately passed off altogether In the second case, though the vexed and difficult question of whether the block was partial or complete arose from time to time there were periods when the block was of the former character The phenomenon of ventricular 'escape" is shown, an auscultatory sign is mentioned to which Griffith elsewhere referred, the effects of amyl nitrite and of atropine are discussed, and tracings are shown which demonstrate the occasional occurrence of 'flutter" of the auricle The third case is not only an example of complete heart-block with an unusually slow ventricular rhythm, but on account of the large number of attacks of the Adams-Stokes character, during some of which satisfactory tracings were obtained In this case also simultaneous tracings of the pulse and of the respiration showed a remarkable relation between the periods of asystole and those of the apnoeic phases of the Cheyne-Stokes respiration when that was present

Application of Iodin to Tongue as Prophylactic Against Influenza —The treatment of cerebrospinal meningitis by the application of iodin to the tongue led Taylor to try it also in this manner as a prophylactic for the same disease and for influenza during the epidemic in the Mbarara and Kigezi districts Uganda, in 1918-19 Taylor's assumption is that iodin to some extent causes disinfection of the mouth, throat, and tonsils, and thus prevents or reduces the intensity of the disease Moreover, the iodin increases the flow of saliva which in itself is prohibitive to the growth of the organisms, and a four-fold action is thus brought into force Ordinary tincture of iodin (B P) was mixed with an equal part of native honey, and in the case of cerebrospinal meningitis, instructions were given that two or three drops of this mixture should be placed on the tongue of contacts two or three times daily No contacts who used it developed the disease and the number of deaths reported fell in a few months from an average of 100 to an average of forty a month Strict isolation of contacts, however was in force before the use of the iodin and it was unusual for contacts to become infected after segregation It is therefore doubtful whether the iodin had any effect In influenza the results appeared to be more definite The iodin was used in the same manner, but with the recommendation that applications should be made at least every three hours, or more frequently if convenient Toward the end of December the disease became prevalent throughout the district and nearly every person except some of those to whom the iodin had been distributed, suffered from the disease in a more or less severe form Among the Europeans who all used the iodin more or less regularly, no case occurred, although many were in daily contact with persons suffering from the disease

June 4 1921 **1** No 3153

*A Defense of Thesis that Opportunities of General Practitioner are Essential for Investigation of Disease and Progress of Medicine J Mackenzie —p 797
*Infective Arthritis and Allied Conditions W H Willcox —p 804
Coccygeal Fistula J P Lockhart Mummery —p 807
*Acute Osteomyelitis of Long Bones in Children A Mitchell —p 807
Case of Idiopathic Muscular Dystrophy H S Carter and W Fleming —p 809
Artificial Pneumothorax C Riviere —p 810

Medical Research —It is Mackenzie's object to demonstrate that the conception of medical research which is dominant today is so immature and imperfect that it renders fruitless much of the research work Indeed, so imperfect is the conception that fields essential to medical progress are not recognized It is well, therefore, that men engaged in medical research should at intervals pause and consider what they are doing, so that they clearly realize the object of their endeavor and be certain that their methods are suited to their purpose Never in the history of medicine has there been such activity as now and there never was a time when it was more necessary to have a clear perception of aims and methods especially as great schemes are being launched in legislature in research, and in education A review of medical progress reveals the fact that medicine is emerging, slowly and hesitatingly, from a past burdened by tradition and even superstition The conception of what constitutes medical science is still so imperfect that no clear understanding exists on what lines it should be pursued While the aim of medicine may be recognized the methods by which this aim may be achieved are not yet understood, and this lack of understanding is leading medicine astray

Infective Arthritis and Allied Conditions —Willcox endeavors to throw some light on the causation of these many forms of chronic rheumatism of doubtful etiology, and to

indicate the lines of investigation and treatment which are most productive of good results not only for existing attacks, but in the prevention of recurrences

Bone Resection in Acute Osteomyelitis—Mitchell believes that the correct treatment is to resect (subperiosteally) the whole thickness of the shaft, not necessarily the whole length, but always the whole diameter of the part over which the periosteum does not exhibit a normal degree of attachment to the underlying bone—an operation described and strongly advocated by Sir Henry Gray in 1909 While one has no hesitation in applying it to the humerus and to the femur in suitable cases, fortunately the bone for which this operation is most frequently demanded is the tibia, where, owing to the splinting afforded by the fibula and to the distribution of the muscle attachments, the conditions for operation, after-treatment, and for good end-results are ideal

Journal of State Medicine, London

May 1921 **29**, No 5

Prevention of Venereal Infection R A Lyster—p 129
Relation of State and Doctor to Venereal Disease S Lomholt—p 136
State Doctor and Venereal Disease Bayet—p 143
Anaerobes in Hair Dust R M Buchanan—p 149
Cinematograph and Psychoneurosis I H Lloyd—p 152

Lancet, London

May 28 1921 **1**, No 5100

*Asthma A F Hurst—p 1113
Mitral Stenosis B Parsons Smith—p 1117
Diagnosis of Dysentery by Sigmoidoscope P Manson Bahr and A L Gregg—p 1121
*Operation for Treatment of Ectopia Vesicae C Roberts—p 1125
Urea Concentration Tests in Psychoses J Walker—p 1126
Case of Osteitis Fibrosa C W G Bryan—p 1129
External Dislocation of Patella R F Maddren—p 1130

Treatment of Asthmatic Attack—An attack of asthma can most readily be cut short by the subcutaneous injection of epinephrin The most efficacious dose is very much smaller than that generally given In many cases a single minim of 1 1000 is enough, more than two minutes being rarely required But the injection should be given at the beginning of an attack, directly a patient wakes in the night, for instance and not half an hour or an hour later when it has reached its full development The relief is so immediate that the patient often falls asleep within five minutes of waking in an attack Such small doses give rise to no unpleasant sensations, such as frequently follow the injection of three or more minims, and the blood pressure does not rise at all Consequently, the treatment can be continued for long periods without any fear of ultimately causing arteriosclerosis For slight attacks and for the feeling of slight dyspnea which may persist throughout the day when severe attacks occur at night atropin and cocain may be used with an atomizer No patient should be allowed to use any of the numerous powders which are used by inhaling the fumes produced when they are burnt, as they invariably aggravate any bronchitis which may be present, and actually give rise to bronchitis in patients who have hitherto been free from it The chief aim must be to devise such a course of action for the patient that he will eventually have no attacks to treat

Operation for Treatment of Ectopia Vesicae—The operation employed by Roberts consists in transplanting the ureters directly into the rectum through its anterior wall above the level of the peritoneal reflection of Douglas' pouch, the general peritoneal cavity being shut off by suture before opening the bowel

June 11, 1921, **1**, No 5102

Ambulatory Treatment of Fracture of Limbs Tuberculous and Arthritis Disease of Joints C A Hoefftcke—p 1222
Surgery of Lung and Pleura G E Gask—p 1223
*Heart Disease and Pregnancy J Mackenzie—p 1230
Schick Reaction and Diphtheria Prophylactic Immunization with Toxin Antitoxin Mixture A T Glenny K Allen and R A O Brien—p 1236
Post War Neurosis S Herbert—p 1238
*Hippuric Acid Synthesis Test as Regards Functional Condition of Kidney P L Violle—p 1239
*Evil Effects of Excess of Protein on Milk Secretion G A Hartwell—p 1240

Heart Disease and Pregnancy—The physiology of the heart in relation to its efficiency is the subject discussed by Mackenzie in this paper The healthiest heart can be forced to do only a certain amount of work, in other words, the reserve force is limited Exhaustion of the reserve force is shown by signs of distress, particularly by dyspnea When effort is made the heart responds and continues to use its reserve force, so long as this is not exhausted, effort causes no distress Thus, though an individual may be able to walk a certain distance in comfort, if he carries a heavy weight he will suffer distress before that distance is accomplished His heart is not in any way impaired, but its reserve force is exhausted sooner This explains many of the phenomena which occur in the heart during pregnancy This state imposes more work on the heart, and this not only in connection with the maintenance of the placental circulation, but also in respect of the additional weight carried by the mother There are again disturbing factors in the form of interference with the shape and movements of the chest and displacement of the heart itself All this additional work is met by a call on the reserve force This is shown by the fact that the field of response to effort becomes limited, the pregnant woman cannot run upstairs so freely or so easily as was her wont The assumption that the heart hypertrophies during pregnancy Mackenzie believes is not justified While it is impossible that long years of continued severe effort may produce a slight increase in the size of the organ, this increase is so small as not to be perceptible in the vast majority of people who lead strenuous lives The fact that pregnant women are hampered by breathlessness in making some effort which previously they could undertake in comfort, shows an earlier exhaustion of the reserve force This does not suggest hypertrophy Further, hypertrophy cannot be detected by a physical examination of the heart, except in those instances—for example, aortic regurgitation—in which it is very well marked In such cases there is a big and forcible apex beat This forcible apex beat does not present itself in healthy pregnant women The changes in the shape of the heart which occur are thus not due to hypertrophy On the contrary, a complete explanation of these changes lies in the displacement of the organ and the widening of the chest caused by the uterine tumor The law of heart failure is also discussed by Mackenzie

Hippuric Acid Test for Functional Condition of Kidney—Violle states that the arterial hypertension is fairly closely connected with the renal condition so far as it has been possible to discover that condition by testing the hippuric acid synthesis in the cases under observation The azotemia, chloridemia, and albuminuria are evolved by crises The modifications observed in the hippuric acid synthesis appear to be rather the reflection of functional parenchymatous disturbances that are capable of gradual modification The hepatic disturbances, since they are not accompanied by renal disturbances fail to effect any modifications in the hippuric acid synthesis, which appears to be of purely renal origin From the point of view of hydrology these findings may explain the results obtained in cases of arterial hypertension by means of treatments of diuretic waters which act energetically on the renal parenchyma On the other hand, Violle has noted that diuretic waters favor the production of hippuric acid, exciting the renal parenchyma, sometimes to such an extent as to double the output

Evil Effect of Excess of Protein on Milk Secretion—Hartwell points out that excessive proportions of protein in the mother's diet may lead to metabolic and nervous trouble in the suckling

Practitioner, London

February 1921, **116** No 2

Oriental Sore A W Sheen—p 77
Strain of Heart W Edgecombe—p 87
Angina Pectoris R O Moon—p 100
*Pericardial Factor in Heart Disease G A Stephens—p 109
Recent Work on Diseases of Heart C W Chapman—p 116
Uses and Abuses of Psycho Analysis R M Wilson—p 125
Psychologic Analysis of Case of Simple Hysteria J K Reid—p 132
Importance of Muscular Relaxation in Examination of Joints C Westman—p 139
Syphilitic Lesions Simulating or Associated with Tubercle Z P Fernandez—p 144

Pericardial Fluid and Intrapericardial Pressure—Stephens endeavors to show that, in normal health, the intrapericardial

pressure is negative to the extent of 4 c c of water, while with hearts that were exhausted at the time of death the pressure became atmospheric The negative pressure produces a suction action, whereby the fluid is kept at a nearly equal thickness all over the heart while its movements are somewhat restricted, but if the intrapericardial pressure becomes less negative, it follows that the movements of the fluid are more marked In health, the difference between the cardiograms taken in the vertical and horizontal positions is hardly noticeable, for the suction action is sufficiently strong to keep the fluid in position, but if this suction action is diminished, the fluid tends to fall to the most dependent part, whereby there is greater freedom of movement on its uppermost surface, and when the patient is lying down this surface is adjacent to the anterior chest wall Cardiograms are shown to illustrate this The more rapidly an engine works the greater the amount of lubricating material is required, and similarly with the heart, when it beats or contracts more rapidly it requires more pericardial fluid An increased secretion of this fluid necessarily disturbs the intrapericardial pressure and a certain amount of "distress" always occurs as the result of exercise until equilibrium of fluid and pressure, or "second wind," is established

South African Medical Record, Cape Town

May 1 1921 **19** No 9

Lethargic Encephalitis A M Moll —p 162
Hydatid Disease K Bremer —p 165
Recent Advances in Radiology and Electrotherapeutics H W Reynolds —p 167
Case of Fibrosis Uteri in Young Unmarried Woman with Atypical Symptoms E A Seale —p 168

Archives Medicales Belges, Liege

March 1921 **74** No 3

Food and Nutrition F Dauwe —p 161
*Pain in the Arms R Marchal —p 206
Present Status of Our Knowledge of Blood Platelets E Delcourt Bernard —p 210

Pain in the Arms—Marchal emphasizes the diagnostic importance of the tendon reflexes in the arm, as reflex action cannot be simulated He describes a case of Pott's disease with incomplete clinical picture, the main disturbances were abnormal sensations in the arms without distinct objective symptoms The vague sensations of burning in the arm and chest and the behavior of the tendon reflexes were explained by the roentgen picture showing extensive tuberculosis of the first four dorsal vertebrae In another case the dysesthesia in the arm for the last twenty days led to the diagnosis of tabes from inherited syphilis

Bulletin de l'Academie de Médecine, Paris

May 17 1921 **85**, No 20

*Surgical Treatment of Aneurysm of the Aorta E Delorme —p 582
Idem T Tuffier —p 586
Allyl Theobromin Remond and Colombier —p 592
*Postoperative Renal Hemorrhage F Legueu —p 590
Resemblance Between Epidemic Encephalitis and Tuberculous Meningitis in Children A Journ —p 594

Surgical Treatment of Aneurysm of the Aorta—Delorme recalls Leriche's suggestion in 1913 to relieve the pains with aortitis by resecting the network of nerves on its surface over a certain stretch He described then the technic that might be followed and presented arguments to show the logical indications for this liberation of the vessel from its nerve sheath

Tuffier relates that his operative case of spindle-shaped aneurysm of the aorta, which was summarized in these columns, June 18 1921, p 1800 dates from 1911 It practically amounted to an unintentional sympathectomy If this was responsible for the success of the intervention then he says, physicians can confidently recommend this simple and harmless treatment There can be no question that removal of sclerous tissue around the aorta or removal of some mechanical obstacle may put an end to severe pains, as some of his cases testify This list includes some of resection of ribs to relieve the hypertrophied heart with pericarditis In one case this operation ten years ago restored the patient to almost normal life but recently he began to suffer anew Tuffier then resected the fifth rib where the pain was felt, and this relieved the patient at once and completely He thinks that almost all forms of aneurysm of the aorta might be benefited by wrapping a strip of fascia around them, but progress in this line is slow as clinicians do not trust these patients to the surgeons He is hoping that physicians will promote progress in this line by referring to the surgeons at least the otherwise hopelessly doomed cases

Postoperative Hemorrhage from the Kidney—In six of the twelve cases reported by Legueu the hemorrhage occurred in a patch of necrosis the result of infarction of a supernumerary or abnormally located artery This artery had evidently been injured when the kidney was drawn out

Bulletins de la Société Medicale des Hôpitaux, Paris

May 20 1921 **45**, No 17

Obesity in Epidemic Encephalitis Nobecourt —p 729 Idem Labbe —p 731
Vitiligo Consecutive to Abortive Syphilid Milian —p 731
Fatal Epidemic Encephalitis with Parotitis Babonneix and Hubac —p 732
*Syphilis of the Lung E P Benoit (Montreal) —p 738
Aplastic Pernicious Anemia E P Benoit —p 741
*The Tourniquet Test in Vascular Disorders d Oelsnitz —p 746
*Cardiac Form of Typhoid Sepsis J Minet and R Legrand —p 749
Mitral Stenosis and Syphilis L A Amblard —p 753
*Benzyl Benzoate in Treatment of High Blood Pressure C Laubry and A Mougeot —p 757
Syphilis in Origin of Diabetes M Pinard and Velluot —p 760

Pulmonary Syphilis—Benoit emphasizes that the peculiarly curable syphilitic disease of the lung may simulate in every respect pulmonary tuberculosis unless roentgenoscopy reveals that it is located elsewhere than at the apex Even with tubercle bacilli in the sputum, a positive Wassermann reaction should suggest the necessity for eliminating by proper treatment the syphilitic factor which always facilitates the development of the tuberculosis He gives six weekly injections of an arsenical and then six weeks of mercury or iodin or both Then he repeats this twelve weeks' course and after a rest of two or three months gives a third course, if the Wassermann is still positive An instructive case is described in a man of 69 who had been spitting blood for a week, and the symptoms all pointed to tuberculosis except the Wassermann reaction and a roentgen shadow which would have suggested an aneurysm of the aorta if there had been pulsation in it Prompt benefit followed specific treatment

The Tourniquet in Treatment of Vascular Disorders—The vasodilation which follows application of the Esmarch bandage for five minutes is attenuated when the sympathetic nervous system is paralyzed or otherwise below par, while it is exaggerated when the sympathetic is abnormally excitable A local hot bath gives corresponding responses D Oelsnitz has been utilizing these phenomena in diagnosis and now announces that systematic repetition of the procedures has a pronounced therapeutic effect in Raynaud's disease and other peripheral vascular disturbances of sympathetic origin Marked benefit was realized in a severe case of Raynaud s disease described The woman applied the elastic compression for five minutes, then plunged the hands in hot water for ten minutes, and then exercised the hands and fingers actively repeating the whole procedure twice a day Practically normal conditions were restored although the chronic vascular derangement had been so severe that one finger had begun to gangrene and ulcerate

Cardiac Form of Typhoid Sepsis—Minet and Legrand report two cases of pure typhoid septicemia sparing the intestines but inducing symptoms of severe myocarditis in one case and of endocarditis followed by pulmonary valve stenosis in the other case The symptoms in both subsided on recovery except the persisting instability of the pulse in the first case and the pulmonary stenosis in the other

Benzyl Benzoate in High Blood Pressure—Laubry and Mougeot have been giving this drug a trial in their service and the experiences with it are to be reported in Perion s thesis In this communication they extol its effect in cases of high blood pressure saying It should be ranked among the adjuvants giving surprising results sometimes rarely negligible never harmful, useful to alternate or combine with other drugs '

Journal de Médecine de Bordeaux

May 25 1921 **92** No 10

Importance of the Blood Pressure in Ear Nose and Throat Disease G Canuyt —p 271
*The Phrenic Sign in Pulmonary Tuberculosis A Ragot —p 272
Impalement Injury of Rectum J Peyrot —p 274
*Surgical Treatment of Trigeminal Neuralgia G Jeanneney —p 275
Medical Conceptions in Rôman Law H Galamiel —p 278
Attempt at Suicide with Veronal J Vergely —p 279
Estimation of Retention of Chlorids A Labat —p 279

The Phrenic Sign in Pulmonary Tuberculosis—Ragot has been impressed with the constancy of a very sensitive point in the supraclavicular fossa with pulmonary tuberculosis The pain on pressure is diffuse and extends deep into the middle of the chest The point in question is where the phrenic nerve lies on the anterior scalenus muscle, between the two heads of the sternocleidomastoid muscle Pain on pressure here is a very early sign of tuberculous infection of the lung, and seems to be constant with this but he never found it with pneumonia or other nontuberculous process

Surgical Treatment of Trigeminal Neuralgia—Jeanneney has found it easy on the cadaver to introduce a cystoscope through a trephining opening and thus have direct illumination of the field for operating on the trigeminal nerve Under its guidance the operation can be done with scarcely any mutilation

Presse Médicale, Paris

May 25 1921 **29**, No 42

*Esophagoscopy R Bensaude and M Lelong —p 413
*Spontaneous Reflux of Bile into Stomach G G Moppert —p 415

Esophagoscopy—Bensaude and Lelong give an illustrated description of an improved esophagoscope which is pushed in by turning a small cog-wheel, and the tube is in interlocking segments so it can be made as long or short as desired for the individual case The patient assumes the knee-chest position with the head low, the physician crouching in front of the table When the tube has passed below the throat, the subject raises his head, and the tube is then horizontal There is no need for an assistant owing to the simplicity and ease of this mode of esophagoscopy, especially for examination of the lower portion of the esophagus In the final position of the subject he is squatting on his heels supported by both hands in front, the physician standing

Spontaneous Reflux of Bile Into the Stomach—Moppert has been studying the Einhorn thread under roentgen examination, and reports that in 72 per cent of the cases examined there was spontaneous reflux of bile into the stomach

Revue de Médecine, Paris

January 1921 **38**, No 1

Reducing Power of the Tissues H Roger —p 1
Radial Jugular Tracings with Auricular Fibrillation —Guilleaume —p 24
Inorganic Murmurs of Precordial Region J Meyer —p 35

Annali d'Igiene, Rome

February 1921 **31**, No 2

*Pathogenesis of Cholera G Sanarelli —p 73 Cont n
Advantages of Mixing Tuberculin and Antiserum in Treatment of Experimental Tuberculosis G Rapisarda —p 90
Disease in the Russian Army 1914 1916 C Kryszkowsky —p 102
*Action of Bile on Tetanus Toxin C Ninni —p 121
Meat from Tuberculous Cattle G C Sperapani —p 128

Pathogenesis of Cholera—In this fourth communication, Sanarelli reports that cholera vibrios injected into the peritoneal cavity pass rapidly into the walls of the digestive tract either directly from the peritoneum or through the general circulation The guinea-pigs do not die from peritonitis nor from general infection or intoxication but from the extremely acute gastro-enteritis induced by the vibrios When the disease is not rapidly fatal, the vibrios leave not only the peritoneal cavity but the blood stream, and accumulate and proliferate exclusively in the walls of the digestive tract

Action of Bile on Tetanus Toxin.—The experiments related by Ninni with tetanus toxin and fresh bile confirm the assumption that tetanus toxin is of a mostly lipoid nature as bile acts on fats Fresh bile neutralizes tetanus toxin, 0 2 c c is able to neutralize ten times the minimal lethal dose

Policlinico, Rome

May 16 1921, **28**, No 20

*Indications in Abdominal Pathology P Gilberti —p 679
*Transperitoneal Low Cesarean Section P Gaifami —p 682
Typhoid Meningism P Fornara —p 684

Indications in Abdominal Pathology—Gilberti discusses the period in abdominal disease in which it is a question whether medical or surgical measures should prevail He emphasizes that in peritonitis the main thing is to discover the source of the inflammation, it is always secondary to disease in some viscus or the thorax When complicating scarlet fever, smallpox or measles, medical measures alone usually suffice Purulent peritonitis from trauma is generally graver than from perforation of a viscus on account of the speed of the invasion When the invasion occurs more gradually, the peritoneum has time to rally its defenses Acute diffuse purulent peritonitis is a strict indication for operation neither too early nor too late, giving the peritoneum a chance to wall off the primary focus The peritonitis may already be diffuse before the classic symptoms of it appear Pain, tenderness, rigid walls and exploratory puncture may enable the diagnosis before the pulse grows small and weak and before meteorism and the tongue tell the story The laparotomy is to evacuate the pus and he incises the lower right quadrant of the abdomen the patient in Fowler s position, refraining from the slightest manipulation of the intestine or irrigation of the peritoneum, but providing the best possible condition for drainage by gravity preferably with absorbent gauze

Low Transperitoneal Cesarean Section—Gaifami has been impressed with the superior advantages of this operation on the lower segment of the uterus as he performed it in seven cases They were all suspicious cases but none actually septic and the outcome was perfect in all In fifty-one cases of repeated cesarean section by the classic technic, he found adhesions in more than 50 per cent One patient developed ileus in consequence and three others required hysterectomy This danger of adhesions is obviated with the incision on the lower segment, and as this incision is lengthwise of the fibers there is less danger of rupture than if the incision were transverse and it is too low for a placenta to develop on the cicatrix The operative shock is less than with other technics the intestines not being molested and the hemorrhage being slight

May 30 1921 **28** No 22

*Paratyphoid Infection V Zamorani —p 747
*Polycythemia P F Zuccola —p 756
Treatment of Cancer S Menghetti —p 757

Paratyphoid Infection—Zamorani relates that in an epidemic of 130 cases of paratyphoid A infection in soldiers the clinical picture resembled typhoid very closely, but in some cases the gallbladder showed marked involvement In some the jaundice did not appear until four or five days after apyrexia In others the angiocholitis dominated the clinical picture from the start In still others except for more or less fever during the first three days, the temperature kept normal Cultivation of the bacilli from the blood is the only means for differential diagnosis in the first two groups The symptoms sometimes indicated lesions in the colon and these were confirmed in the few cases that came to necropsy Intestinal hemorrhage and perforation were observed only in the paratyphoid B cases the A infection running an apparently milder course He was impressed by the epidemic character assumed by the various forms of the disease

Polycythemia—Zuccola refers to recent American research on peripheral polyglobulia, saying that the results confirm what had already been announced by Italian workers a decade or so before The latter stated that in conditions with polycythemia carbon dioxid is thrown off in perspiration more actively than under other conditions They explained this as representing an attempt at vicarious respiration, the blood accumulating and stagnating at the periphery

May 1 1921 **28** Medical Section No 5

Auscultation at the Mouth G Ancona —p 185
Origin of Blood Platelets U Erede —p 203
*Pathology of Icterohemorrhagic Spirochetosis C Basile —p 211
The Skull and Brain from the Mechanical and Physical Standpoint F Pedrazzini —p 221 Cont n

Pathology of Icterohemorrhagic Spirochetosis—Basile discusses the pathogenesis of jaundice and of hemorrhage in general and especially in icterohemorrhagic spirochetosis The jaundice in these cases, he thinks, is the result of destruction of erythrocytes, the liver has little if anything to do with it The hemoglobin thus released by the toxic action of the spirochetes becomes transformed into bilirubin without the aid of the liver, while the liver suffering from the action of the toxins, as well as of the spirochetes, is unable to accomplish the elimination of the bile pigment

Riforma Medica, Naples

May 21 1921 37, No 21

*Visceral Ptosis G Parlavecchio—p 481
*Calcification in Mediastinum N Samaja—p 485
*Eversion of Hernial Sac D Taddei—p 489
*The Heart Liver Angle G Cattani—p 490
*Tests for Urobilin E Pittarelli—p 492
Treatment of Intracranial Hypertension E Arevoli—p 494

Diagnosis and Treatment of Nervous Disturbances from Visceral Ptosis—Parlavecchio reviews the symptoms which may be induced by sagging viscera dragging on and twisting the sympathetic nerve, with secondary malfunction of elements of the endocrine system The nervous and psychic clinical picture of exophthalmic goiter, without visceral ptosis, is practically identical with that which may be induced by a sagging kidney, for example, without goiter The ptosis of the kidney may escape detection, even with radioscopy, as the kidney may slide back into place on reclining Operations to correct visceral ptosis may prove brilliantly successful in curing nervous and psychic disturbances traceable to this cause Even if the sagging organ is not causing any disturbance at the moment, it is bound to suffer sooner or later, and grave disturbances may develop insidiously When mechanical measures fail to relieve, a correcting operation can be recommended with confidence in its efficacy and harmlessness In all his experience he has never had a fatality nor any complications In some cases three or more organs had to be fastened back in place, at one or more operations, before the final cure He emphasizes the importance of early intervention, especially when the symptoms resemble those of neuroses appendicitis or peptic ulcer, nervous disturbances of these types tend to persist even after removal of the cause He advises not to shrink from an ample exploratory incision when necessary and adds that measures for suspension of the organ imitate Nature better especially for organs that vary in shape and size The operation should always be supplemented by efforts to restore the endocrine-nervous balance This may require breaking the sympathetic nerve chain connecting the ptosis with the nervous disturbances The fine results he has realized he ascribes in large part to his intentional or unintentional breaking of this sympathetic chain between the sagging organ and the corresponding ganglia Whether to resect or stretch the nerve or to apply electrolysis is the question now, his preference inclining to conservative methods He adds, "This suggestion is sure to arouse ferocious criticism, but the success realized by Leriche and others by peripheral sympathectomy answers all theoretical objections"

Calcification in Mediastinum.—In Samaja's case the calcification in the anterior mediastinum and diaphragmatic eventration were casual discoveries on roentgenoscopy of the woman of 63, whose only complaint was of an inguinal hernia

Eversion of Hernial Sac—Taddei gives an illustrated description of his method of correcting adherent inguinal or scrotal hernias by eversion of the sac, instead of merely leaving the stump loose to invite adhesions etc

The Heart-Liver Angle—Cattani warns that the liver may be twisted forward and sag a little thus presenting an aspect as if it were hypertrophied This is liable to be misleading unless the area of dulness at the back is compared with the anterior dulness, and the outline of the liver is determined by percussion A right pleural effusion can be excluded by the yielding of the liver to pressure when it is pushed toward the center of the diaphragm The angle formed by the right margin of the heart and the top of the liver is exceptionally accessible and the change in this angle with changes in either heart or liver is very instructive In the normal, the angle is between 40 and 50 degrees, exceptionally up to 60 With enlargement of both heart and liver, the angle broadens out and may even become an obtuse angle The tip of the angle approaches closer to the median line the smaller the heart or with excentric left hypertrophy The angle is characteristically displaced with pericardial effusion and adhesive pericarditis

Tests for Urobilin—Pittarelli concludes from his comparative research that the fluorescence with zinc urobilinate is the only practicable reaction available for estimation of the urobilin content of the urine. For this, two parts urine are added to one part of the reagent, which is a mixture of 100 c c of a 2 per cent solution of zinc acetate in methyl alcohol, 5 gm each of acetic acid and ammonia acetate, and 100 c c amyl alcohol The contents of the test tube are gently mixed and set aside for a few minutes, when fluorescence will testify to the presence of urobilin In all tests for urobilin a possible source of error is the presence of eosin in the urine, when eosin has been used in coloring icing, or other foods, disinfecting dishes, etc

Cronica Medica, Lima

April 1921 38 No 694

Amyloid Degeneration of the Heart E Odriozola.—p 108
*The Grave Form of Carrion s Disease E Odriozola—p 113

Peruvian Verruga—This entire number is devoted to the late Professor Odriozola and his contributions to science, from his thesis on amyloid degeneration of the heart, at Paris in 1888 to his latest article published in the *Cronica Medica* this year on dextritis, summarized in these columns April 30, 1921, p 1286 The list of his communications fills nearly six pages This study of Carrion's disease, or Peruvian verruga, was read at the fifth Pan-American Medical Congress in 1913

Siglo Médico, Madrid

May 7 1921, 68 No 3517

*Acute Leukemia R Alvarez de Toledo y Valero—p 429
*Meningitis Diagnosed by the Eye V Ribón (Bogota)—p 434

Acute Monocyte Leukemia—The woman of 28 died sixteen days after the onset of the acute leukemia of the hemorrhagic pseudoscorbutic and buccopharyngeal type The first symptoms were violent pain in the epigastrium with vomiting and signs of infectious purpura, infarction of lymph glands in neck and spleen and pains in the limbs as manifestation of the disease of the bone marrow Under the influence of various measures, including injection of horse serum and of 5 per cent peptone, the leukocytes dropped from 80 000 to 9,000 and 2,100 but the disease continued its fatal course There was a history of an attack of subleukemia eighteen months before which had retrogressed under iodin, arsenic, a change to the mountains, and heliotherapy

Meningitis Diagnosed from the Eye—A somewhat similar article by Ribon was summarized in THE JOURNAL, June 12 1920 p 1682 He here describes the case of a woman who developed cerebral symptoms eleven days after removal of the kidney on account of a tuberculous process She attributed her staggering gait and dizziness to weakness from the nephrectomy, but the discovery of choked disk confirmed the assumption of tuberculous meningitis The edema and inflammation of the optic disk were not so pronounced as usual with a brain tumor Tuberculous meningitis in the adult rapidly entails coma and death, as a rule Death followed in two days in this case

Acta Scholae Med Univ Imperialis, Kioto

March 25 1921 4 No 1

*Pathogenesis of Osteomyelitis T Hobo—p 1
Influence of Drugs on Action of Veratrin on Muscles S To—p 31
*Gastrointestinal Mucous Under Chloroform H Komoda—p 57
*Operation for Chronic Osteomyelitis H Komoda—p 79
Peripheral Action of Conin Spartein and Gelseminin G Tamba—p 85
*The Urine During Fasting N Suzuki and N Hasui—p 105

Pathogenesis of Osteomyelitis—Hobo's handsomely illustrated article shows how bacteria in the blood stream tend to accumulate at points of more sluggish flow This occurs particularly in the venous capillaries and, above all, in those in the bone marrow liver and spleen The venous capillaries in

the bone marrow twist and turn so that conditions are exceptionally favorable here while conditions are particularly unfavorable for phagocytosis

Irritation of Gastro-Intestinal Mucosa from Chloroform.—Komoda announces that the mucous membrane of the digestive tract of dogs, cats, rabbits, guinea-pigs and white mice shows changes after inhalation or subcutaneous injection of chloroform which are like those of acute gastro-intestinal catarrh after poisoning The chloroform swallowed in the saliva and the chloroform in the blood stream cooperate in this irritation The nausea and vomiting after chloroform anesthesia are easily explained by this acute gastric catarrh The degree of irritation is not proportional to the amount of chloroform or the size of the animal, but rather to the individual resisting powers The changes were found most pronounced in the dog and least in cats and rabbits Certain features of the experiments seemed to indicate that chloroform undergoes a chemical change from the action of hydrochloric acid

Chronic Osteomyelitis—Komoda describes a case in which chronic suppurating osteomyelitis of the lower third of the femur in a student of 19 kept recurring, with fistulas, after a total of seven operations At the eighth operation, under chloroform the whole layer of the vastus externus muscle was divided The incision running around the femur down to the bone seemed to modify conditions, so that healing proceeded undisturbed thereafter He explains how the flexion of the limb caused conditions counteracting the healing of the chronic inflammation By severing the muscle close to its lower end, these unfavorable conditions were done away with The distal stump healed with connective tissue attachment to the proximal stump, so that the movements of the knee were not impaired later

Composition of the Urine During Fasting—Suzuki and Hasui were able to examine the urine systematically in a healthy man of 29 who undertook a three weeks' course of fasting "to develop his mind" In another case a two weeks' course of fasting was undertaken to cure dyspepsia Nothing but water was taken by either subject during the fast and the tabulated findings are given for the entire period With the exception of hunger and slight dizziness during the whole fast neither experienced any appreciable disturbances The metabolic findings under various tests are also tabulated and the behavior of the amino-acids and their cleavage products in the fasting organism

Archiv fur klinische Chirurgie, Berlin

Feb 28 1921 **115** No 1 2 Kocher Memorial Number

Treatment of Appendicitis in Kocher s Service A Vogel —p 1
*Gastric and Duodenal Ulcer A Kocher —p 86
*Importance of Nucleoproteids for the Organism W Grobly —p 170
*The Relative Phosphorus Content of the Blood W Grobly —p 261
Anuria with Bilateral Hydronephrosis in Sagging Kidneys G Dardel —p 275
*The Alcohol Test Breakfast W Lanz —p 294
*Fracture of Neck of Femur H Rubeli —p 388

Kocher Memorial Number—The eight articles in this bulky number issue from the surgical clinic of the University of Berne of which the late Prof T Kocher was in charge for so many years During his nearly forty-six years of teaching he trained over 100 assistants Most of these articles were being prepared under his supervision at the time of his death in 1917

Gastric and Duodenal Ulcer—A Kocher relates that the diagnosis of florid ulcer proved correct in only 86 per cent of the total cases In the others a healed ulcer or adhesions were found in 12 per cent but in 2 per cent no trace of an ulcer could be discovered He argues that in the majority of cases the gastric or duodenal ulcer is only one manifestation of a general pathologic condition This explains the frequent tendency to recurrence with either medical or surgical treatment, the underlying constitutional vagotonia or sympathicotonia, arteriosclerosis etc, not being cured thereby In 144 cases recently reexamined after gastro-enterostomy, the intervals since up to nineteen years, the results have been very good and permanent in 177 per cent, fair results in 99 per cent and the condition has been unsatisfactory since in only 114 per cent Resection cannot show such a good record as this, as a rule, he declares, emphasizing that these figures prove that a correctly located and correctly functioning gastro-enterostomy not only heals the ulcer but seems to ward off recurrence The ultimate outcome was satisfactory in a larger proportion of cases after the gastro-enterostomies than after resections

The Nucleoproteids and the Endocrine Organs—Grobly ascribes a very important role to the nucleoproteids in the organism in general in respect to the growth, endocrine functioning and the predisposition to cancer He presents evidence to the effect that the nucleoproteids are predominantly important in the growth of the cell and that they regulate certain chemical processes in the organs in which they are found most abundant These organs are the organs of nucleoproteid metabolism, and this group includes all of the glands with an internal secretion Any disturbance in the nucleoproteid metabolism deranges all these organs at once and simultaneously "This conception of the simultaneous disturbance of nucleoproteid metabolism in all these organs renders unnecessary the assumption of nerve or hormone control relations between these organs of nucleoproteid metabolism, alias the endocrine glands" His data further testify that a pathologic exaggeration of nucleoproteid metabolism represents an anomaly of the constitution which seems to predispose to malignant disease

Cancer and the Relative Phosphorus Content of the Blood—Grobly continues with further evidence which apparently demonstrates that the synthesis of phosphorus is dependent on the synthesis of nucleoproteids Hence the phosphorus content of the cell is an index of the ability to elaborate nucleoproteids The phosphorus content of the blood consequently may be regarded as an objective index of this ability, it enables us to distinguish between conditions of normal, subnormal and hypernormal nucleoproteid synthesis He never found up to 1 5216 per thousand except in cases of cancer, and subjects with a phosphorus quotient of over 3 17 always had a tumor He thinks that the results of his research may supply a basis for further biologic experimentation especially in the diagnosis, treatment and prophylaxis of malignant disease

The Alcohol Test Breakfast—Lanz expatiates on the many advantages and freedom from drawbacks of this method of testing stomach functioning which he has been applying in 102 cases The subject drinks fasting 20 c c of the mother solution in 300 c c of water, keeping out 20 c c for colorimetric control The mother solution is a mixture of 150 c c of 96 per cent alcohol 10 c c of a 1 per cent alcoholic solution of phenolphthalein and distilled water to 200 c c This test breakfast is taken with relish and never harms the most delicate stomach and there is no disturbing reflex action from chewing The fluid is aspirated out at fifteen minute intervals, emptying the stomach completely at the hour Twenty-seven pages of the tabulated findings are given, with the control tests in a number of the total 102 cases including fourteen with apparently sound stomachs No typical curve was found for ulcer in general but classified according to site a certain regularity in the findings was manifest A general predisposition to ulcer was accompanied by a special curve even when there did not happen to be any ulcer This predisposition is most instructively revealed by this alcohol test breakfast before the full clinical picture of ulcer develops, while there is yet time to ward off erosion and ulceration

Fracture of Neck of Femur—The full details of sixty-four cases are given with illustrations of the various types of fracture in this region In the total ninety-seven cases reviewed one third were in women or girls The treatment and the outcome in the different groups are compared

Beitrage zur klinischen Chirurgie, Tubingen

1921 **121**, No 2

*Cardiospasm Atony and Dilatation of Esophagus F Thieding —p 237
*Sensibility of the Abdominal Cavity F Breslauer —p 301
*Explanation of Death in Ileus M Flesch Thebesius —p 321
Appendicitis in the Elderly Mertens —p 341
Narrowing of the Gastro Entero tomy Opening J Dorn —p 345
*Incarcerated Hernia in Infants A Kruse —p 361
*Hernia of the Omental Bursa W Pfanner —p 376
*Mammary Cancer V Hofmann —p 400
*Roentgen Exposures After Mammectomy H Kastner —p 413
*Surgery of Bones O Orth —p 424

Fracture of the Radius in the Young W Peters—p 439
Chronic Arthritis Deformans in the Young H Tichy—p 453
*Gelatin from Tetanus H Spieth—p 460
*A Test of Hemorrhage by Muscle Flap F C Hilgenberg—p 468

Cardiospasm, Atony and Idiopathic Dilation of the Esophagus—Fleiding devotes nearly 100 pages with seven pages of bibliography, set solid, to demonstrate that cardiospasm, atony and idiopathic dilatation of the esophagus are not independent clinical pictures, but merely the clinical signs of an upset in the vegetative nervous system The one feature common to all is the dysphagia He gives a long list of causes that may induce this dysfunction in the vegetative system, from tumors and neuritis to frights, infectious diseases, and lead and other poisoning

Sensitivity of the Abdominal Cavity—Breslauer concludes from his study of this subject that the nerve fibers are not sensitive to brief stimuli But long continued or violent stimuli lead in time to a summation which results in the sensation of pain

Fatal Factors in Ileus—Flesch-Thebesius found in examining the urine of 188 surgical patients with the nitric-acid test that a double ring was evident in 25 cases These were all cases of severe lesions with much destruction of tissue, or peritonitis, etc In 35 other cases with ileus or suspected of ileus, the double ring was constant in the 17 with signs of severe intoxication In the others the double ring appeared as the case progressed to severer toxic manifestations The findings confirm that death in ileus is due to intoxication, and that this intoxication is the work of the same substance which induces the upper ring in Heller's test With a positive reaction, a bluish gray ring forms above the ring at the zone of contact of the nitric acid and the urine

Incarcerated Hernia in Infants—Krause states that infants formed 4 5 per cent of his 834 cases of hernia requiring operative treatment The hernia was incarcerated in 4 per cent of the 183 incarceration cases He compares this material with the records, his conclusion being that in infants the intestine is not injured so promptly as in the adult and that taxis is permissible if an operation can follow at once if it fails The danger of incarceration imposes prompt operative measures for all hernias in infants The results and the permanent cure are especially good

Hernia of the Omental Bursa—Pfanner discusses the relations between hernia of the omental bursa and gastric ulcer, and the interpretation of the radiographic findings

Mammary Cancer—Hoffmann reviews the experiences at Heidelberg with 174 cases of mammary cancer The permanent cures of scirrhous cancers were as 1 2 (44), while with other cancers the proportion was 1 3 6 (130)

Roentgen Exposures After Mammectomy—Kästner relates that in forty-two cases given thorough postoperative roentgen exposures, there was recurrence in 47 6 per cent by the end of a year, while recurrence occurred in only 33 per cent of the nonexposed cases, and in 36 per cent of the imperfectly exposed cases These figures speak for themselves, and Payr has now abandoned the custom of postoperative irradiation with mammary cancer

Surgery of Bones—Orth discusses with illustrations the operative treatment of pseudarthrosis and also a method of applying the prosthesis after amputation, directly to the bone This can be facilitated by separating the tibia and fibula for example, and suturing the skin separately around each Another means is by inserting a metal rod directly into the tibia stump A third method is described in which part of the fibula is removed and implanted in the marrow cavity of the tibia, to lengthen the latter It is reenforced by two metal bars worn outside

Spine Deformity from Tetanus—Spieth reviews the five cases that have been published in which the spine developed more or less of a gibbus from traction of muscles during tetanus They have been published as cases of primary gibbus, but he concludes on the basis of a personal case described that there was always some underlying tuberculous or traumatic spondylitis

Arrest of Hemorrhage by Sutured Scrap of Muscle—Hilgenberg comments on the promptly effectual arrest of hemorrhage when a piece of muscular tissue is sutured over the bleeding spot He gives some typical examples of severe bleeding from parenchymatous organs, the thyroid, liver and lung, also a number of cases of bleeding from veins, sinuses or arteries in which this measure proved promptly effectual as also in cases of aneurysm, angioma, air embolism and open pneumothorax He questions whether there may not be some chemical action from the muscle in addition to its mechanical effect The piece of muscle is usually taken from the vicinity and sutured to close the opening or reenforce other tissues It heals in place without disturbance and has always given good results to date

Deutsche medizinische Wochenschrift, Berlin

May 12 1921 47, No 19

Attainable Goals of Specific Tuberculosis Treatment Selter—p 525
*Induced Pathogenicity of Acid Fast Saprophytes J Igersheimer and H Schlossberger—p 526
*Acid Fast Saprophytes Resembling Tubercle Bacilli B Lange—p 528
Droplet Infection in Tuberculosis E Lippke—p 528
Defense Reaction Toward Tubercle Bacilli in Patients with a Scrofulous Constitution H Jastrowitz—p 528
Diagnostic Cutaneous and Subcutaneous Tuberculin Reaction in Surgical Tuberculosis E Ruscher—p 529
Incidence of Occult Tuberculosis in Dortmund Sander—p 532
Reasons for Occasional Apparently Negative Results from the Friedmann Treatment F F Friedmann—p 533
Cure by Diathermy of Tuberculosis Cutis Verrucosa After Negative Application of Friedmann Treatment G Poelchau—p 534
Present Status of the Problem of the Hereditary Transmission of Acquired Characters J Schaxel—p 535
Acute Intestinal Disorders in Infants L Langstein—p 536

Studies on Tuberculosis—Igersheimer and Schlossberger report experiments on the eyes of guinea-pigs to study the pathogenicity of pure cultures of acid-fast saprophytic bacteria After a prolonged sojourn in the bodies of guinea-pigs, pure cultures were again prepared of the same bacteria, and their behavior compared with that of the primary strains and of genuine tubercle bacilli of the human type Their experiments confirm that after several passages through animals, slightly pathogenic acid-fast bacilli of various kinds may become more pathogenic, until they exert on guinea-pigs a similar effect to tubercle bacilli Whereas the primary strain produced on the eyes of guinea-pigs either no reaction or a nonspecific reaction with a retrogressive tendency, all the strains examined so far, resembling morphologically and culturally the human type and derived from apathogenic or only slightly pathogenic acid-fast bacilli, by passage through warm-blooded animals, produced a tuberculous involvement of the inoculated eye, which clinically and anatomicopathologically could not be distinguished from that produced by genuine virulent tubercle bacilli of the human or bovine type Numerous necropsies proved that the infection of the eye was not a pseudotuberculosis but that, from the eye as its source, a tuberculous infection of the whole organism took place The experiments, however, do not prove that these bacteria of the acid-fast group are identical with the genuine tubercle bacilli

Acid-Fast Saprophytes Resembling Tubercle Bacilli—Lange reports as the result of his experiments that he found that cultures of so-called trumpet bacilli and tubercle bacilli of turtles and other cold-blooded animals, which were recultivated from induced foci in guinea-pigs and white mice did not prove to be more virulent toward the said experimental animals than the primary strains The further inoculation of healthy animals with virus from the pathologic foci, which contained numerous bacilli, did not result in an increased virulence of the bacteria

Mitt a d Grenzgeb d Med u Chir, Jena

1921 33, No 1 2

*Origin and Structure of Gallstones B Naunyn—p 2
*Roentgenography of Large Intestine J Ziegler—p 55
*Chronic Spinal Serous Meningitis E Gro smann—p 66
Mill Wheel Murmur in the Heart W Gundermann—p 78
The Pituitary with Thyroid Deficiency W Berblinger—p 92
Congenital Stenosis at the Cardia C Falkenheim—p 113
Origin and Treatment of Spontaneous Pneumothorax A Brunner—p 124
Differential Diagnosis of Tumors on Limbs W Sieloff—p 149
Chronic Paronychia L Kumer—p 160
*Strumitis Marcha Hagenbuch—p 181

*Occult Gastro Intestinal Bleeding H Peiper —p 107
Increased Pressure in Half of Pleura S Graff —p 232
Illumination of Field of Operation J Thiemann —p 245

Origin and Structure of Gallstones—Naunyn explains that after dissolving out all the cholesterin etc, forming the calculus, a delicate framework of organic matter is left in every gallstone He declares that there is no evidence to date that gallstones can form in an aseptic medium They are liable to develop at any point in the biliary apparatus, and they consist mainly of cholesterin and bilirubinate Four double colored plates show the minute structure of thirty-eight varieties of gallstones

Roentgenography of the Large Intestine—Ziegler discusses the influence on the shape and position of the large intestine exerted by other viscera and other organs, near and remote, as modifying the roentgen picture

Spinal Serous Meningitis—Grossmann comments on the almost certainty of success from operative treatment of chronic spinal serous meningitis as illustrated in his three cases In the older woman paralysis of arms and legs subsided after the operation, done under local anesthesia The circumscribed serous meningitis had developed after a trauma in one of the cases In another case it seemed to be a complication of influenza Nothing was found to explain the process in one case except that the woman's sister had presented hemoptysis

Strumitis—There was manifest goiter only in thirty-eight of the forty-seven cases of strumitis reported by Hagenbuch Treatment was merely symptomatic as a rule In the rheumatismal form, salicylic medication proved a useful adjuvant, as also in some cases of vague origin As soon as fluctuation is evident the incision should be ample to allow for thorough drainage She advises to excise suppurating cysts and encapsulated nodules This is indicated also when the strumitis is still circumscribed

Occult Gastro-Intestinal Hemorrhage—Peiper obtained conflicting findings in regard to occult bleeding in fifteen cases of gastric or duodenal ulcer in seven of gastric cancer, ten of cholecystitis, 6 of hypochlorhydria, and one of hydatid cyst in the liver His conclusion is that occult bleeding is by no means pathognomonic for either cancer or ulcer

Veroffentlichungen d R Koch-Stiftung, Leipzig

1921 2 No 3

*Biology of the Tubercle Bacilus G Lockemann —p 105 and p 114
*Routes of Infection with Tuberculosis J Koch and B Mollers —p 120
Acid Proof Saprophytes B Lange —p 134
Occurrence of Tubercle Bacilli in the Blood E Rumpf —p 163
*Treatment of Surgical Tuberculosis with Roentgen Rays K Stromeyer —p 168

Biology of the Tubercle Bacillus—This volume of publications of the Robert Koch Endowment for Combating Tuberculosis opens with two reports by Lockemann on the way in which the growth of tubercle bacillus cultures is modified by various physical features of the culture mediums, and by addition of various chemicals

Routes of Infection with Tuberculosis—Koch and Mollers report experimental research which confirms that tubercle bacilli can be absorbed through the lymph glands and the adenoid tissue in the mouth When the bacilli were injected directly into the small intestine, they were conveyed to the mesenteric glands through the chyle vessels without inducing changes in the bowel walls themselves Part of the bacilli settle in the mesenteric glands, while the rest are conveyed by the chyle farther and pass into the blood with it There is no reason they remark, why this same mechanism does not prevail in children as well as in the rabbits of their experiments Tubercle bacilli introduced into the stomach seldom entailed general infection Rabbits infected by way of the mouth and upper alimentary canal developed a more local infection resembling the chronic pulmonary processes in man and tuberculous glandular disease

Tubercle Bacilli in the Blood—Rumpf was never able to obtain cultures of tubercle bacilli from the blood, and in only two of thirty-five rabbits inoculated with blood did tuberculosis develop This was in the proportion of 8 5 per cent of the known tuberculous

Roentgen-Ray Treatment of Bone and Joint Tuberculosis—Stromeyer has applied roentgen irradiation in 220 cases of surgical tuberculosis, and here analyzes the results in 119 of them traced to date A complete cure was realized in 18 of the 20 cases of tuberculous glands in the neck, and another case was improved, another group of 18 cases are still under treatment and 11 are practically cured This method of treatment therefore is without question, he says, the only treatment for tuberculous glands Very satisfactory results were obtained also with bone and joint tuberculous processes, beyond anything yet realized otherwise All were cured of the 5 wrist cases, 1 spondylitis, 1 sternum, 2 soft parts, and 4 peritonitis cases, and all but 1 of the 6 elbow and of the 14 hip joint cases but only 6 were cured and 2 improved of the 9 knee cases, and 2 of the 4 ankle cases These figures do not include the 53 still under treatment, although they show already practically a cure in 21 instances Instead of the one, two or three years required for heliotherapy, these results were realized with radiotherapy in months, only one knee process required a fourteen months' course He accepts as demonstrated a specific action by the rays on tuberculous tissue although it is not always amenable to this treatment especially in adults All but 9 of his patients were under 20

Zeitschrift fur Kinderheilkunde, Berlin

April 25 1921 **29**, No 1 2

*Breast Nursing by Sick Mother Anne Moldenhauer —p 1
*Intraperitoneal Instead of Subcutaneous Infusion M Weinberg —p 15
Roentgenography of Child Heart F M Groedel —p 36
Calcium and Phosphoric Acid Metabolism Under Large Doses of Calcium and Sodium Phosphate K Bluhdorn —p 43
Research on Intestinal Bacteria E Moro —p 56
Cultivation of Bacillus Butyricus with Adsorbent in Medium A Adam —p 59
Cultivation of Bacillus Bifidus in Hematin A Adam —p 63
*Blood Picture with Mongoloid Idiocy G Nadolny and M Weinberg —p 68
Conditional Babinski Reflex F Resek —p 85
*Appetite Curve Paula Panzer —p 90
*Urine Test for Active Tuberculosis O H Kotzulla —p 93
*Birth Hemorrhages in the Newly Born P Schwartz —p 102

Maternal Nursing During Sickness—Moldenhauer has been making a special study of thirty lactating women with various diseases to determine the effect on the infants of nursing by the sick mother In 6 cases of mastitis the infants continued to nurse except when the sucking caused the mother intolerable pain The least affected breast usually secreted more to make up any deficiency, and not the slightest harm to the child could be detected in any instance, not even when the breast had been incised and the wound was suppurating freely In 4 cases of aseptic operations for hernia, interval appendicectomy or cholecystectomy, the infants took the breast as soon as the woman roused from the anesthetic and no harm resulted for either child or mother, as also in 5 operations for septic processes In 5 cases of multiple sclerosis, bulbar paralysis or neuropathy with tendency to suicide, no injury for mother or child resulted from the continuance of the breast nursing In 10 cases of various internal infectious diseases none of the infants contracted the disease, but it seems wiser to forbid breast nursing with open tuberculosis or dysentery Under other conditions there is no reason for taking the child from the breast Even when the women were very sick the amount of milk secreted, although less than previously, still proved sufficient for mixed feeding of the infant and as the women improved the milk production rapidly increased In two cases of dysentery, the infant had been taken from the breast from fear of contagion and the women's condition was grave, but still it proved possible to keep up the secretion with the breast pump, a minimum of 100 gm daily Then six weeks later, with the aid of a vigorously sucking infant the milk secretion was brought back to approximately normal and the woman's own child was returned to her, confident that it was getting enough milk from her One of the 30 women proved to have open tuberculosis and the child of 6 months was at once taken away, and has shown no signs of tuberculosis Disease in the mother therefore rarely calls for suspension of breast nursing With skill and perseverance on the part of the physician and the attendant the maternal nursing can be maintained

Intraperitoneal Infusion in Infants—Weinberg has found intraperitoneal infusion a simple, harmless, and very effectual method for supplying water to the infant organism suffering from losses of fluids. With a needle 1.5 mm. in diameter, 100 c.c. of fluid can be infused in a minute or minute and a half. Under the age of 6 months he gives in this way from 100 to 150 c.c. If necessary the infusion can be repeated the same day. The amount of fluid infused must never be enough to distend the abdomen. Fully 60 per cent. of the infused fluid is absorbed in the first few hours. In twenty-four hours up to 300 c.c. are absorbed, and the procedure can be applied to infants of all ages, even the newly born. Ringer's solution, physiologic sodium chlorid solution or solutions of dextrose can be infused and the fluid can be tinted or medicated. The pulse, respiration, weight and general condition show the benefit. In some cases it is prompt and striking, in any event it occurs within six hours. Disturbances of alimentary origin respond better than those of infectious nature. The indication for intraperitoneal infusion is absolute when the supply of fluids by the ordinary routes is impossible. Toxicosis in infants and even the condition known as decomposition may respond to this measure after failure of all others. It is simpler and easier, as well as more effectual, he declares in conclusion, compared with subcutaneous infusion. Five typical cases are described in detail to show its action.

The Blood Picture with Mongoloid Idiocy—The tabulated findings show that the blood picture with mongoloid idiocy corresponds to that of normal children under 10.

The Appetite Curve in Infants—Panzer has been recording the avidity with which infants take their food, and has thus obtained characteristic curves specifying the appetite, with corresponding curves to represent the movements of the child, as it is normally lively or apathetic. The chart of each infant thus has a record for appetite and movements in addition to the weight, temperature and food records.

Urine Reaction in Tuberculosis in Children—Kotzulla has been applying the own urine test by Wildbolz' technic to fifty children and has found that it throws light on the progressive nature of tuberculosis in a child beyond anything attainable by other means. It proved specific for active tuberculosis in the absence of nephritis and staphylococcuria. The passage of antigens into the blood from a proliferating but not yet clinically manifest tuberculous focus occurs earlier, and can be detected by this means more promptly than by any anatomic changes. He therefore endorses the Wildbolz technic as a valuable addition to our means for detection of an active tuberculous process. (The urine is evaporated to one tenth and then is injected intradermally by the Mantoux technic. The test was described in THE JOURNAL Aug. 9, 1919, p. 456.)

Suction Hemorrhages During Delivery—Schwartz explains that when a part of the child is born, the difference in the atmospheric pressure outside of the uterus acts like a vacuum glass, sucking the fluids in the body into the exposed portion. As a vacuum glass applied to the skin draws it up with aspirated fluid in the same way the blood is aspirated into the presenting head as it emerges into the air. Microscopic examination shows an excess of blood in almost all parts of the brain of the just delivered child, with here and there minute extravasation of blood. This is another specific birth injury to be counted with. The amount of the injury from this suction hemorrhage depends on the presentation and the duration of the expulsion period, but above all on the constitution of the child. He has found evidence of this *Ansaugungsschadigung* in twenty infants dying during or soon after delivery. The hemorrhages were found in both pia and brain substance, at widely scattered points.

Zentralblatt fur Chirurgie, Leipzig

April 20, 1921, **48**, No. 17

*Operative Treatment of Jejunal Peptic Ulcer. E. Baum.—p. 586
Primary Suture or Drainage After Strumectomy? F. Lotsch.—p. 589
*Conservative Treatment of Chronic Ulcus Cruris. Ekstein.—p. 590
Surgeon's Table for Catgut and Silk. A. Jurasz.—p. 591

Prevention and Operative Treatment of Jejunal Peptic Ulcer—Baum states that during recent months he has operated on thirty-one gastric and duodenal ulcers by Billroth's method I and four by Kocher's method. He was influenced not so much by the desire to remove the pylorus as a disturbing factor as he was to diminish the secretory gastric surface and, above all, by implantation of the duodenum in the stomach, to approximate physiologic conditions. He is convinced that the immediate contact of the hyperacid stomach with the lower portions of the small intestine must, along with certain nervous factors, be regarded as the cause for peptic jejunal ulcers. Just as resection by Kocher's or Billroth's (first) method offers the sole protection against the formation of postoperative peptic jejunal ulcer after gastro-anastomosis, the radical cure of such an ulcer already formed demands that the jejunum be kept from coming in contact with the hyperacid gastric secretion. After removal of one gastro-enterostomy, a second should not be made by a technic exposing to recurrence, whether the pylorus is removed or retained. Baum gives reports of three successful cases of jejunal peptic ulcer in which he endeavored to establish physiologic conditions by the direct union of stomach and duodenum in place of performing gastrojejunostomy.

Conservative Treatment of Chronic Leg Ulcers—Ekstein again touches on the conservative method that he has used for many years in treating hundreds of cases of chronic ulcus cruris. The localization, number and size of the ulcers do not affect the method of treatment. He has cured cases in which amputation had been advised, without recurrence and without confining the patients to bed or even interfering with their regular occupations. The lower leg is raised until the swelling has nearly died down. The ulcer is then cleansed with benzin and covered with iodoform gauze on which is a heavy coating of petrolatum containing 5 per cent. boric acid, following which careful bandaging of the leg in an elevated position from the metatarsus to the knee with strips of gauze 10 cm. wide is done. Over this covering the same area, a compressive moist starch bandage 12 cm. wide is applied. The leg is held high until this bandage is entirely dry. The patients are instructed to go on with their regular work and to report back when the bandage has become wet through and loose and is causing pain, the length of time before this takes place depending on the size of the ulcer and the amount of the secretion. Three or four such bandages at most are required to effect a complete cure of palm-sized ulcers with callous edges, often penetrating the skin to the fascia. After healing a tricot or elastic stocking should be worn and strict orders should be given to cleanse the leg only with benzin or ether for the next three months or so.

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*Breaking up Adhesions for Pneumothorax Treatment. H. C. Jacobeus.—p. 293
*Lipoma in Umbilical Hernia. M. Ruben.—p. 339
Operative Treatment of Hallux Valgus. H. Olivecrona.—p. 354

Severing Adhesions Impeding Therapeutic Pneumothorax—Jacobeus describes (in English) his experience with cauterization of bands and other adhesions in forty cases of pul-

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*Early Work on Anatomy in Finland R Tiger tedt—p 95
*Blindness from Wood Alcohol Poisoning R Rostedt—p 113
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Early Work on Anatomy in Finland—Tigerstedt reproduces some engravings from an early Finnish work on anatomy recalled to memory by the recent celebration by the University of Abo of the two hundred and fiftieth anniversary of the organization of the chair of medicine

Blindness from Wood Alcohol Poisoning—Rostedt relates that since the complete prohibition of alcohol in Finland, cases of injury to the eyes from substitutes for brandy have totaled sixty He says that this represents a new pathologic condition in Finland and he protests that it cannot be called methyl alcohol poisoning as methyl alcohol alone is not so injurious as wood spirit Franceschi has reported that he administered to himself 32 gm of pure methyl alcohol daily for a period of nine months thus a total of 9 kg without appreciable injury The toxic elements in wood alcohol are the fusel oil and other substances In 50 per cent of the sixty cases, blindness followed while amblyopia was pronounced in all The visual disturbances developed about the third day in the majority, and then continued a progressive course for from two to four weeks after which there was usually slight improvement but it was only transient as a rule

Eclampsia—Boije urges individualized treatment with active measures if possible, and relates that the mortality in his sixty-seven cases was 8 9 per cent for the mothers The reduced mortality for the children was 11 1 per cent

Hospitalstidende, Copenhagen

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Negative Wassermann Reaction with Active Syphilis J Christiansen—p 315

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*Tuberculosis in Young Children T Oldenburg—p 683

Pulmonary Tuberculosis in Young Children—Oldenburg relates that of the 130 children under 4 years of age with pulmonary tuberculosis at the sanatorium in his charge 53 per cent were dismissed much improved or cured and 64 per cent of the 105 with an interval since up to six years have been in average good health since, 20 per cent died, and no information could be obtained in regard to 16 per cent The proportion is thus quite large in which the antibody balance in the body seems to have kept within normal range The antibody balance in young children is precarious however, and any intercurrent infection or unhygienic mode of life is liable to upset the balance, and then the latent tuberculosis flares up anew, and each time it is harder to control The main point in treatment of tuberculosis in young children is to minimize the opportunities for repeated and frequent new inoculations until the resisting powers are more stable Gohn has published necropsy statistics showing a progressive form in 94 per cent of the infants with pulmonary tuberculosis under the age of 6 months, 92 per cent, 6 months to a year, 66 per cent from 1 to 2 years, 55 per cent, 3 to 4 years, and only 29 per cent between 5 and 8

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AUTOGENOUS BONE TRANSPLANTATION *

MELVIN S HENDERSON, M D
ROCHESTER, MINN

In my discussion I shall attempt to present briefly my experience in autogenous bone transplantations I have carefully reviewed, with the assistance of Dr Pio Blanco, the records in the Mayo Clinic of 413 patients on whom bone transplantation had been performed during the eight years between Jan 1, 1913, and Jan 1, 1921 It would be confusing and tiresome to discuss in statistics alone, so I trust you will pardon me if my deductions at times seem to be dogmatic As nearly as possible I have based deductions on accurate clinical information, not trusting merely to clinical impressions It is my hope that the conclusions and the deductions reached from this experience and study will be of interest and possibly of some value to you There is no need to review the literature, for that has been done thoroughly by others I feel, however, that I should express my appreciation of the impetus given this subject by Dr F H Albee and by the late Dr J B Murphy

The study of autogenous bone transplantation is so interesting that it is difficult to adhere closely to the subject and not to follow out the many leads suggested by the investigation, but I shall try to keep to the main facts

One hundred and sixty-six of the 413 patients were suffering from tuberculosis of the spine and were subjected to the operation, with various slight modifications, as originated and advocated by Albee Of the remaining 247 patients, all but a few were operated on for ununited fractures

SPINAL TRANSPLANTS

The definite end-results of spinal transplantation are not easily determined Contrary to conditions in the fracture group, we are dealing with a condition which, though it may be the disabling factor, is practically always a secondary manifestation of a focus elsewhere The operation and subsequent mechanical treatment are only a part of the procedure Therefore, conclusions in such a group are more or less unreliable It is not possible to see all the patients, one, two or more years after operation, and many times inferences must be drawn from correspondence

The data I have to offer with regard to end-results are based on 132 patients who could be traced out of a total of 141 patients operated on more than eighteen months before I have classified the disease as arrested or cured when the patients were free from pain and were able to resume their occupations, although not necessarily their original occupations The postoperative complications of the entire group of 166 is available for study There were only nine children in the series, since the operation is rarely advised for them

Of the 132 patients concerning whom we were able to learn enough to warrant an opinion with regard to the end-results, there were sixty-six (50 per cent) who may be considered cured, or with the disease arrested Twenty-nine (21 99 per cent) were improved, twenty-two (16 66 per cent) were unimproved, and twelve (9 09 per cent) died later The exact cause of death in all instances could not be determined, but from correspondence with the patients' relatives and physicians, I should judge that the majority died of disseminated tuberculosis Three (2 26 per cent) died so soon after operation that their deaths must be regarded as postoperative mortalities, one dying of pulmonary embolism on the fourteenth day, and two of tuberculous meningitis in about the fourth week

Only four (2 4 per cent) of the 166 patients had postoperative infections, which is remarkable since all of the patients had had two incisions, one in the back and one in the leg The legs were not infected, but in a few instances a hematoma developed which discharged bloody fluid and then healed In at least two of the four patients who became infected, I believe that the cause was the breaking through into the wound of a tuberculous abscess The graft was lost in two patients In a few patients the devitalized skin over a prominent kyphos broke down, the exposure of the graft to the air caused a localized osteomyelitis In two patients we later chiseled off the dead portion of the graft, which was followed by healing of the ulcer This condition cannot rightfully be called an infection In four patients who were not doing well, the roentgenograms disclosed the graft fractured over the kyphos, and in two we placed a graft on the opposite side of the spinous process In a few cases we showed poor judgment in advising operation, failing to appreciate the poor condition of the patient Generally speaking draining sinuses no matter where they are situated, and pulmonary tuberculosis, unless quiescent, contraindicate surgery A few of the grafts became loose and one end protruded against the skin because they were put in under tension A bone graft should never be under tension By taking the bone from the flat internal surface of the tibia, the graft can be sufficiently curved to fit almost any kyphos I have found it advanta-

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geous to hold the transplant against the denuded spinous processes with beef-bone screws, using 6-32 machine size screws carefully placed at some distance from the kyphos, for a screw hole through the transplant at the apex of the kyphos might lead to fracture of the graft This procedure is not always possible, particularly when the site of operation is in the upper dorsal region, the structure and slant of the spinous processes making it difficult to place the screws (Table 1)

The operation is in no sense of the word radical, and the patient cannot be offered the advantage of a removal of a portion of the tuberculous tissue and debris, as is offered in a resection of the knee It would be an interesting contribution to our knowledge if two groups of patients of like age and under the same surgical control could be studied, one group being operated on, the other not operated on, and all the patients confined to bed for equal periods, with the same type of brace I have not, however, made such a study and can merely state that my opinion concerning this group of patients who are subjected to bone transplantation for tuberculosis of the spine is that the results are more favorable than in those not operated on, that, owing to the uncertainty of the fate of the bone graft in children I seldom advise the operation for them, and finally, that, as the theory of the operation is logical and it gives better control of the average patient, I shall continue to advise the operation in adults

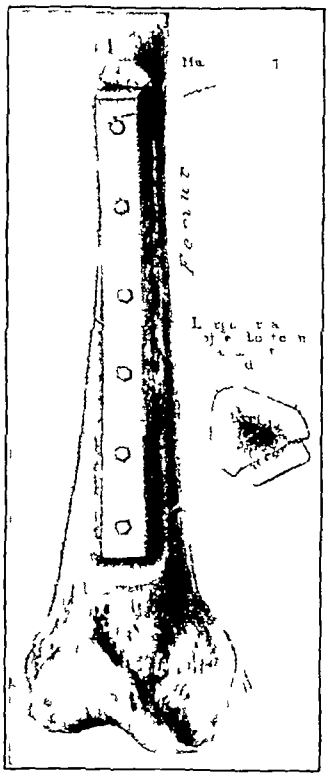

Fig 1—Massive autogenous graft applied to femur and held in place by six beef bone screws This graft gives abundant contact of endosteum to endosteum

TRANSPLANTS FOR DELAYED UNION, NONUNION, AND OTHER CONDITIONS

Two hundred and forty-seven patients were operated on for ununited fractures, bony defects, and so forth, and in all fairness, I may say that as a group they are difficult to treat successfully One hundred and thirty-nine of the 247 had been operated on elsewhere, from one to six attempts having been made to induce union Fifty-nine had been infected, many had great masses of scar tissue, and the skin was adherent to the bone so that a slough would have followed any interference In some the mistake was made of operative interference too soon after the cessation of discharge and the infection was stirred up again

TRANSPLANTS FOR UNUNITED FRACTURES OF THE LONG BONES

Patients with fracture of the tibia (102) formed the largest group Fifty-five of these had been operated on before elsewhere Two patients (1 9 per cent) died from influenza There were four (5 4 per cent) infections in seventy-three clean cases, but the graft was not lost There were nine (31 per cent) infections in twenty-nine cases that were clean at the time of operation but had been infected previously The bone graft was lost in four patients of this group Seven patients were not traced Thus, there are ninety-five patients on whom to base our statistics of the end-results

TABLE 1—SPINAL AUTOGENOUS BONE TRANSPLANTS

Patients operated on previous to Jan 1 1921		166
Patients operated on previous to Jan 1 1920		141
Patients operated on previous to Jan 1 1920	traced	132
Cured (or disease arrested)	66 (50 0 per cent)	
Improved	29 (21 9 per cent)	
Unimproved	22 (16 66 per cent)	
Operative deaths	3 (2 26 per cent)	
Later deaths	12 (9 09 per cent)	

One hundred and sixty six patients each with two large incisions gave four (2 4 per cent) infections The graft was lost in two patients Prominent kyphos may cause ulcer Four patients fractured the graft and two were reoperated on Occasional loosening of one end of the graft occurred owing to tension A curved graft and beef bone screws should be used

Eighty-five operations (89 4 per cent) were successful eight (8 8 per cent) were failures In order to secure the eighty-five cures, six patients were operated on twice, in other words, 101 operations were performed on the ninety-five patients

In thirty-six patients, ten having been operated on elsewhere, bone transplantation was performed for ununited fractures of the femur There was one operative death (2 07 per cent) In thirty-four clean cases there were three (8 8 per cent) infections, one graft was lost Two cases, clean at the time of operation, but having been infected previously, suppurated and one graft was lost Three patients were not traced, this leaves thirty-three patients on whom to base statistics of the end-results Nineteen of these (57 5 per cent) were cured, and thirteen (39 3 per cent) were not cured Three of the patients were operated on more than once, making thirty-six operations on the thirty-three patients, and, basing the statistics on the number of operations, 52 7 per cent were cures Twenty of the transplants were performed for old ununited fractures of the neck of the femur, with eleven successes and nine failures Twelve were performed on the shaft, with eight successes and four failures

Bone was transplanted to the radius in thirty-five patients, twenty-three having been operated on elsewhere, but as seven (20 per cent) were not traced, we were able to ascertain the end-results in only twenty-eight patients, the statistics are compiled from these Twenty-two (78 5 per cent) of the operations were successful, six (21 5 per cent) were failures One patient was operated on by us twice In twenty-eight clean cases, not infected previously, there were five (17 9 per cent) infections, and two grafts were lost Three (42 8 per cent) of the seven cases previously infected suppurated, but only one graft was lost

The humerus was operated on in thirty-four patients, and all but one were traced Twenty-six of these patients had been operated on elsewhere, some of them three and four times Twenty-seven of the operations were performed in clean fields without infec-

tion previously, and four (14 per cent) became infected, but only one bone graft was lost Seven cases were clean at the time of operation but had been infected previously Four (57 per cent) became infected, and four bone grafts were lost There were twenty-three (69 6 per cent) successes, and ten (30 03 per cent) failures One patient was not traced Six patients were operated on more than once, making thirty-nine operations on thirty-three patients, with twenty-three successes (56 4 per cent)

Transplantations to the ulna were performed on eighteen patients Seventeen of the cases were clean and had not been infected previously, but two (11 7 per cent) became infected and in one the graft was lost One infection developed in a patient who had been infected previously, but the graft was not lost Two of the patients in this series were not traced, thus leaving sixteen for purposes of estimating end-results Thirteen (81 2 per cent) of the operations were successful, three (18 7 per cent) were failures

Autogenous grafts were used in nine patients who came to the clinic with nonunion following resection of the knee Only six of these could be traced, all (100 per cent) had union One patient was infected and lost sight of A bone graft was used in the patella in two instances, one patient could not be traced, the other obtained a good result A graft was used in the nose once, and in the sacro-iliac joint once Nine patients with ununited fractures of the jaw were operated on All were traced, union resulted in seven (77 7 per cent) One became infected but the wound healed later, one died of an intercurrent affection (Tables 2 and 3)

In the entire group of 247 patients with ununited fractures, 223 were traced Basing end-results on these, it is found that 177 patients (79 3 per cent) were successfully treated, forty-two (18 8 per cent) were not cured Eighteen of the patients were operated on twice, making 241 operations on 223 patients, with a resulting cure of 177 (73 4 per cent) An attempt to study the failures by percentages is not enlightening, since the causes of failure are many and diversified Infection is a prominent cause of failure, but does not necessarily mean failure Faulty technic, poor coaptation of the fragments to each other and to the graft, poor external fixation, and lack of cooperation on the part of the patient may all tend to put undue stress on the graft and cause its fracture In not a few instances when this has happened in my experience, union eventually occurred under proper fixation and control Osteoporosis of the fragments is an unfavorable condition and should be overcome if possible More and more I am advising patients with nonunion and osteoporosis to remove all casts or splints and use the part in order to get the bones in better condition to receive the transplant It is almost a certainty that union will be obtained with the bone graft in a pseudarthrosis of many years' standing when the bone

TABLE 2.—AUTOGENOUS BONE TRANSPLANTS FOR UNUNITED FRACTURES

	Traced	Operations	Success	Failure	Death
Tibia	90	101	85	8	2
Femur	33	36	19	13	1
Radius	28		22	6	
Humerus	33	39	23	10	
Ulna	16		13	3	
Ununited knees	6		6		
Jaw	9		7	1	1
Patella	1		1		
Nose	1		1		
Sacro iliac	1		0	1	
Total	223		177	42	4

There were 247 cases in all but only 223 were traced with 177 (79 3 per cent) successes and forty two (18 8 per cent) failures There were four (1 7 per cent) deaths three due to influenza one due to a cerebral embolus in a femur case Tibia 101 operations on ninety five patients giving 84 1 per cent successes Femur thirty six operations on thirty three patients 52.7 per cent successes Humerus thirty nine operations on thirty three patients 56 4 per cent successes.

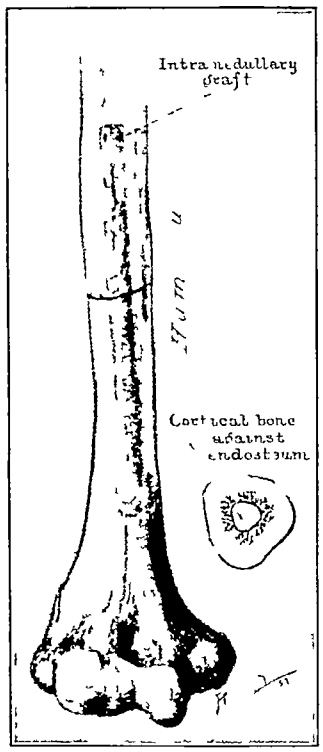

Fig 2.—Intramedullary autogenous graft No contact of endosteum to endosteum In this situation the graft is a foreign body and will be absorbed

ends are of the eburnated type This study, therefore, enables me to say that the most favorable bones to deal with in treating ununited fractures are the tibia, ulna, radius, humerus and femur, respectively The percentage of infections in these cases, contrary to the infections in the spinal graft cases, is high, and this should be explained In the 247 cases there were thirty-nine (15 7 per cent) infections following our operation It is only fair, however, to divide these cases into two groups those in which there had been no infection previously and those in which there had been infection In 201 cases, twenty (9 9 per cent) clean cases, not infected previously but often having much scar tissue, were infected, whereas in the forty-six cases infected previously, nineteen (41 3 per cent) were infected This rate could be excused possibly in the cases infected previously, but cannot be so readily excused in the clean cases There are certain extenuating circumstances Most of the operations were difficult and prolonged, which means that tissues were handled, traumatized, exposed and often dried more than is proper The technic is often somewhat difficult of application, particularly when previous operations have produced much scar tissue, and one of the fragments is short and near a joint These are, I think, the main causes of the high percentage of infection, for the rate of suppuration in the easily conducted and short operations on the spine is quite low and will compare with any series of clean cases in the entire field of surgery In the general surgical cases in the Mayo Clinic, Sistrunk has found that the average of infection in clean cases[1] is about 10 per cent Our technic has not absolutely prevented the introduction of the gloved hand into the wound, but so far as was practical the actual handling of the tissues was done with instruments I am quite sure that the percentage of infections in the same type of cases would be much higher if the autogenous bone graft were abandoned and beef bone or metal substituted Metal is irritating to the tissues, and beef bone is not as readily tolerated

1 These include all cases clean before operation and retroperitoneal cases not drained

as an autogenous graft Infection in not a few cases developed because of breaking down of the scar tissue in the deep structures, and occasionally because the skin sloughed The possibility of a hematogenous infection should also be considered The traumatizing of the tissues incident to the operation causes them to be devitalized and therefore susceptible to infection

The manner in which the bone graft is used is also of prime importance In our earlier work the intramedullary plug was used with indifferent success The inlay graft is as nearly as is possible an anatomic approximation of tissues which appeals to one as being a surgically sound procedure In a certain percentage of cases, however, in which the operation had been satisfactory in every respect and the postoperative fixation was as nearly perfect as possible, the graft broke, usually about the fifth to the eighth week I think we are nearly all agreed that the bone transplant, at least in great part, is absorbed and replaced by new bone During this period of absorption and replacement there is a period when the graft itself is weakened by the absorption, and the new bone deposited is too soft and fresh to be of any real support At this time a slight stress will cause fracture of the graft If the massive graft is used, the very size of the graft gives a margin of safety not given by either the intramedullary or the inlay graft Also, the cancellous or endosteal tissue is the richest in osteoblasts By denuding the fragments and exposing the layer of cancellous tissue, and applying the bone graft with its cancellous tissue to that of the fragments, large surfaces rich in osteoblasts are brought together I believe that with the technic of firmly holding the transplant to the fragments with beef-bone screws, a large proportion of the transplant functions and lives without being absorbed and replaced by new bone

I am certain that our results have been improved by using the massive graft and clamping it to the fragments by aid of beef-bone screws, and where there is sufficient muscle and soft tissue comfortably to cover it I shall continue to use it The size of the massive graft in the tibia increases the tension on the skin, and may cause a necrosis of the skin and the death of the graft because of exposure I prefer the inlay graft from the opposite leg if the bone is osteoporotic, if not, I use the sliding inlay reversible method

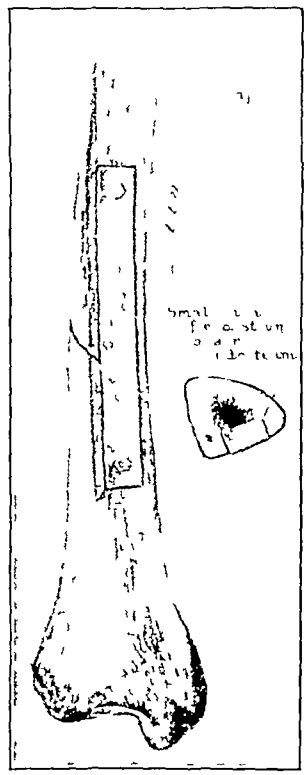

Fig 3—Inlay autogenous graft applied to the tibia Contact of endosteum to endosteum over a limited area Two beef bone screws are used to steady the graft

TABLE 3—AUTOGENOUS BONE TRANSPLANTS FOR UNUNITED FRACTURES

	Clean Cases	Infected Number	Infected Per Cent	Previously Infected	Infected Number	Infected Per Cent	Graft Lost
Tibia	73	4	5 4	29	9	31 0	4
Femur	34	3	8 8	2	2	100 0	2
Radius	28	5	17 8	7	3	42 8	3
Humerus	27	4	14 8	7	4	57 1	5
Ulna	17	2	11 7	1	1	100 0	1
Ununited knees	9	1	11 1				
Jaw	9	1	11 1				
Patella	2						
Nose	1						
Sacro iliac	1						
Total	201	20	9 9	46	19	41 3	1.5(6%)

There were thirty nine (15 7 per cent) infections in the entire 247 cases In the 201 cases in which there had not been any previous infection there were twenty (9 9 per cent) infections In the forty six cases in which there had been previous infection there were nineteen (41.3 per cent) infections

SUMMARY

The cases studied comprised 413 patients subjected to the operation of transplantation of bone One hundred and sixty-six of the patients were operated on according to the method of Albee for tuberculosis of the spine, and 247 were operated on for ununited fractures, bony defects, etc One hundred and thirty-two patients with tuberculosis of the spine operated on more than eighteen months before have been definitely followed Sixty-six (50 per cent) may be regarded as cured or as having the disease arrested, twenty-nine (22 per cent) were improved, twenty-two (16 66 per cent) were unimproved, twelve (9 per cent) died later, probably of disseminated tuberculosis, three (2 26 per cent) died so soon after the operation that their deaths must be classed as operative mortalities The operation is advised only in adults Four (2 4 per cent) developed infection in the wound in the spine, there were no infections in wounds of the leg Two grafts were lost

Two hundred and twenty-three of the 247 patients operated on for ununited fractures, etc, were traced In 177 (79 3 per cent) the operations were successful, and forty-two (18 8 per cent) were failures Four (1 7 per cent) of the patients died Two hundred and forty-one operations were necessary to obtain these successes, thus, the 73 4 per cent successes are based on the number of operations rather than on the number of patients In contrast to the spinal cases, which were better than the average in any group of clean cases, the percentage of infections ran high Thirty-nine (15 7 per cent) of the 247 patients developed infections Two hundred and one had clean wounds Many of them had been operated on before without suppuration, but often with considerable scarring, twenty (9 9 per cent) of these became infected Forty-six patients had been infected previously, although apparently the wounds were clean at the time of operation, and in nineteen (41 3 per cent) suppuration followed surgical interference These infections caused the loss of the graft in fifteen cases (6 per cent), and in almost all a persistence of the nonunion The technic used in the spinal transplants was used in the fracture transplants In the first group the percentage of infections is considerably below and in the second, above normal I believe, therefore, that the cause of the infections rests on the type of case rather than the technic Possibly a two stage operation would lower the percentage of infections

The percentage of successes in operations on the various long bones was tibia, 89 4, ulna, 81 2, radius 78 4, humerus, 69 6, femur, 57 5 The massive graft with beef-bone screws to hold it in place has given better results than either the intramedullary or the inlay graft

DEFECTIVE DIET AS A CAUSE OF STERILITY

A STUDY BASED ON FEEDING EXPERIMENTS WITH RATS *

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AND
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The application of the term sterility to most, or all, infertile matings has led to much confusion of thought In most of them the failure of reproduction is, in fact, the result of decreased fertility rather than of actual sterility on the part of the two individuals concerned

Actual sterility of individuals, of course, exists There are cases dependent on anatomic malformations and other pathologic conditions in which the individual may be pronounced sterile even when mated with a fertile partner, until the local condition has been remedied, but these actual sterilities of anatomic or pathologic origin probably constitute but a small proportion of the infertile matings in either the human or other species

TABLE 1—COMPOSITION OF DEFICIENCY DIETS *

Diet Low in Fat Soluble Vitamin		Diet Low in Calcium	
Rolled oats	40 0	Whole wheat	67 5
Gelatin	10 0	Casein	15 0
Casein	5 0	Whole milk powder	10 0
Salt mixture (McCollum)	3 7	Sodium chlorid	1 0
Dextrin	40 3	Inert substance	1 5
Cod liver oil	1 0	Cod liver oil	5 0
Diet Low in Proteins		**Double Deficiency (War) Diet**	
Wheat	70 0	Wheat	60 0
Salt mixture (McCollum)	3 7	Sodium chlorid	1 0
Dextrine	21 3	Inert substance	1 5
Cod liver oil	5 0	Dextrine	32 5
		Cod liver oil	5 0

* It will be seen that each diet in this table contains an ample supply of all essential elements with the exception of the one for which it is designed to be deficient

There are certainly a large number of infertile matings which are purely functional and due to physiologic alterations in general or local conditions Such physiologic alterations moreover often coexist in the sterilities of pathologic origin and when unrecognized and consequently unremedied undoubtedly explain a large proportion of the continued infertilities after operation

EXPERIMENTAL WORK

Evidence to this effect which had accumulated in the course of our clinical work led us to plan, in 1919, an experimental study of this subject, and the production of infertility by partial dietary deprivation in essential substances proved to be the most practical method This work is still in progress and is to be repeated with numbers large enough to be of final evidential value and fit for complete statistical treatment, but the results obtained from the smaller numbers seem now to warrant a provisional report

As we have already described the experimental work in detail in a paper read before the American Gynecological Society last week, and as limitation of space prevented our taking up there the application of our conclusions to the treatment of human infertility, we wish in this article to give a summary of the experimental work, together with our conclusions and then to proceed to their application to the human race, and to the corroborative evidence derived from our clinical experience The article on the experimental work will be published in the *American Journal of Obstetrics and Gynecology*, and will supply the arguments in favor of our conclusions which limitation of space forbids our introducing here

TABLE 2—CHEMICAL ANALYSIS OF DIETS *

	Stock Diet	Low Fat Soluble Vitamin	Low Calcium	Low Protein	Double Deficiency or War Diet
Protein	18 0	19 6	23 4	8 4	7 1
Fat	10 1	3 8	6 7	6 5	6 3
Carbohydrate	55 3	63 1	53 6	69 5	72 3
Salts	4 7	4 5	2 6	5 0	2 1
Fiber	0 9	0 9	2 7	1 3	2 6
Moisture	11 0	8 1	11 0	9 3	9 6

* By comparing the various diets as to chemical constituents it will be noted that they are all adequate except for the designated deficiencies

We used in this work a strain of albino rats which has been produced by Dr Helen D King[1] of the Wistar Institute They had been inbred at the time we obtained them for thirty-four generations by brother and sister matings with selection for strength and health Although well and strong they were of slightly diminished fertility as compared with Dr Castle's heterogenetic strain, which was frequently used for rematings in testing individual fertilities More than 90 per cent of the matings of Dr Castle's rats were fertile, while only 65 per cent of matings from Dr King's strain produced young when the rats were fed on the stock diet of Dr Castle's laboratory This figure of 65 per cent is then the standard mating fertility for the check rats in our experiments which were on the stock diet of the laboratory

We subjected rats of this strain to three deprivation diets, one of which was low in the fat soluble vitamin, one was low in calcium, and the third low in proteins All these diets were given in unlimited quantity and were ample and similar in all other respects (Tables 1 and 2) These deficiencies were chosen as being

TABLE 3—RESULTS OF MATINGS ON VARIOUS DIETS (KING × KING RATS) *

Diets	Number of Matings	Number of Positive Matings	Percentage of Mating Fertility	Percentage of Individual Fertility
Stock diet	23	15	0 65	0 81
Low fat soluble vitamin diet				
Proved	8	4	0 50	0 70
Unproved	13	4	0 31	0 55
Low calcium diet				
Proved	0	0		
Unproved	7	1	0 14	0 37
Low protein diet				
Proved	0	0		
Unproved	5	0		
Double deficiency diet (low in calcium and protein)				
Proved	3	0		
Unproved	5	0		

* This table shows the result of matings in which both partners were king rats and both were on the indicated diet

those which are most often present in persons belonging to the well fed classes in the United States To them we added a fourth diet which was deficient in both calcium and proteins This diet gives an approximate representation of the most important deficiencies in the war and postwar diets from which portions of Europe have been, and still are, suffering, and is therefore of interest at the moment

* This work was aided by a grant from the Elizabeth Thompson Science Fund

* Read before the Section on Obstetrics Gynecology and Abdominal Surgery at the Seventy Second Annual Session of the American Medical Association Boston June 1921

1 King Helen D J Exper Zool 26 335 1918 27 1, 1919 27 29 1919

These diets reduced the mating fertilities of our rats from the normal 65 per cent to 55, 31 and 14 per cent, respectively, in the several classes of deficiency diets as shown in the column headed Mating Fertilities in Table 3 It delayed the appearance of fertility in rats raised on these diets and lowered its degree as shown in the curves which are reproduced for each class in Figure 1 These results were produced, as is shown in Table 4, by a mere decrease in the percentage of the deficient element, not by its absence, and without any other change in the life conditions of the rats

The production of so much infertility by so slight a change is surprising, but it is explained by the probability which our work already makes evident that many sterile matings result from very slight decreases in the individual fertility of the two animals concerned, as is apparent by reference to the columns headed Average Individual Fertility in Tables 3 and 5

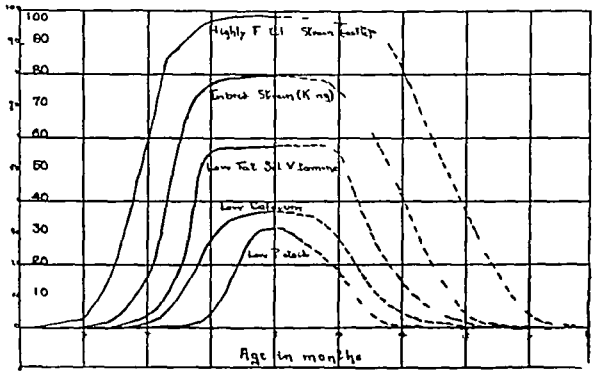

Fig 1—This chart combines percentage of fertility with the age at which reproduction first occurred for Castle rats for King rats and for rats on the three single deficiency diets The dotted half of each curve does not represent actual observations but conforms roughly with the sexual life of these animals The sharp rise corresponds to puberty and the sharp fall to the cessation of sexual activity Note that the effect of deficient diet is to shorten and depress each curve as a whole

The fertilities of individual rats were then obtained by repeated matings and by rematings with Castle rats of known fertility When the indexes for all the matings were placed in a column in the order of their fertilities, it was found that reproduction did not occur when the calculated fertility of the matings was below 45 per cent

TABLE 4—VITAL ANALYSIS OF DIETS*

	Stock Diet (Ample in All Elements)	Low Fat Soluble Vitamin	Low Calcium	Low Protein	Double Deficiency (Low in Calc and Protein)
Protein	18 0	19 6	23 4	8 4	7 1
Fat soluble vitamin	5 0†	1 0†	5 0†	5 0†	5 0†
Calcium	1 8	1 88	0 03	1 88	0 03

* The amount of the fat soluble vitamin cannot be determined by chemical analysis The figures given represent the amount of the vitamin containing substance
† Estimated

This result[2] is given in Table 6, in which for simplicity only a small number of representative matings are introduced In this method of estimation it was assumed that the fertility of a mating may be represented as the product of the individual fertilities of the two animals, as, for instance, $0\,8 \times 0\,8 = 0\,64$, which is the mating fertility of the King rats on our stock diet, or $0\,6 \times 0\,6 = 0\,36$ which would be negative mating A mating fertility of 0 45 was found to be the "threshold for reproduction," below which young could not be expected and above which their arrival would be predicted[3]

The threshold was not only approximately accurate when the rats used were of equally decreased fertility, but also held true when a rat of lowered fertility was mated to one of higher or full fertility (e g, $1\,0 \times 0\,5 = 0\,50$ = reproduction, $0\,8 \times 0\,4 = 0\,32$ = a sterile mating, etc)

TABLE 5—RESULTS OF REMATINGS ON VARIOUS DIETS (KING × CASTLE RATS)*

Diets	Number of Matings	Number of Positive Matings	Percentage of Mating Fertility	Percentage of Individual Fertility
Stock diet	10	7	0 70	0 70
Low fat soluble vitamin diet				
Proved	0	0		
Unproved	20	9	0 45	0 45
Low calcium diet				
Proved	0	0		
Unproved	19	6	0 30	0 30
Low protein diet				
Proved	0	0		
Unproved	12	6	0 50	0 50
Double deficiency diet (low in calcium and protein)				
Proved	0	0		
Unproved	0	0	0	0

This table gives the results of rematings rats from the negative matings of Table 3 with Castle rats of known fertility Since such Castle rats are of practically 100 per cent fertility the index of average individual fertility of their King rat partners is the same as the index of mating fertility It will be seen that the individual fertilities of rats on the deficiency diets are so low as to have insured sterile matings with partners of the same grade (Table 6)

TABLE 6—SCHEMATIC CHART OF FERTILITY*

Individual Fertility		Mating Fertility per Cent
$1\,0 \times 1\,0$		1 00 or 100
$0\,9 \times 0\,9$		0 81 or 81
$0\,8 \times 0\,8$		0 64 or 64
$0\,7 \times 0\,7$	Threshold for	0 49 or 49
		45
$0\,6 \times 0\,6$	Reproduction	0 36 or 36
$0\,5 \times 0\,5$		0 25 or 25
$0\,4 \times 0\,4$		0 16 or 16
$0\,3 \times 0\,3$		0 09 or 9
$0\,2 \times 0\,2$		0 04 or 4
$0\,1 \times 0\,1$		0 01 or 1

* The figures in this table vary from those actually obtained from the matings only in being restricted to even tenths for the sake of clearness The establishment of 45 per cent as the threshold for reproduction must of course be regarded merely as an approximation until larger numbers have been employed

Repeated experiments showed moreover that if rats whose individual fertility had been decreased to, for instance, 0 6 were mated, their mating was sterile and remained sterile so long as these rats were kept together, but that if these rats with individual fertilities of 0 6 were each remated with highly fertile rats from Dr Castle's strain the matings would both prove fertile

These results frequently prove most illuminating when we come to compare them with problems which arise in the infertilities of the human race

Another feature of the experimental work which is most interesting and important is the very slight change in the general condition of the rats which was produced by the single deficiency diets in spite of the great decreases in the fertility of their matings This is shown in the illustrations of representative individuals from the several classes (Fig 2 *A*, *B* and *C*) and by the individual weight curves shown in Figures 3 and 4 This also proves important when compared with clinical observations

2 The result was obtained from rats on stock diet and will be retested with those on deficiency diets though we have seen no reason to doubt its applicability

3 In fact study of all the matings made revealed that there were but two exceptions to this rule—in one case young were produced in a mating with an index of 0 40 and in one mating with an index of 0 49 no young were produced but these were the only exceptions out of thirty three matings

In Figure 2 *D*, a pair of rats which were brought to maturity on the double deficiency diet (the war diet) are shown Their small size and poor condition is very evident when compared with the photographs of rats on the other diets The individual weight curves are also evidence of this This marked change of condition was attended by great loss of fertility, all their matings with each other proving sterile We have obtained European statistics which show a corresponding decrease in human fertility in the countries of central Europe, notably in Austria, but lack of space forbids the reproduction of these statistics in this paper

It seemed possible that the mechanism by which these infertilities were produced might be elucidated by study of the testicles and ovaries of the comparatively infertile rats to which end we made serial sections of many of these organs We intend to continue this study

The work of Robinson [4] on prenatal death makes it probable that certain ova [5] contain within themselves conditions which make complete development impossible but these conditions may, or may not, be morphologically visible

Figures 5 and 6 are sections from the organs of rats on the single deficiency diets We exhibit them with the statement that when compared with sections from normal animals (Figs 7 and 8) they show no anatomic changes which have been demonstrated under the methods so far employed

Figures 9 and 10 are sections of ovaries of rats on the double deficiency diet with their more extreme infertility These ovaries do show several peculiar conditions which must be studied further, notably ova contained in unruptured graafian follicles which are composed of four cells This section (Fig 10) is to be compared with a normal ovum under high power (Fig 11) These may be ova which have undergone premature segmentation, they may represent the development of four ova in a single follicle We are uncertain what they represent and can at present make no statement about them except that they are plainly abnormal

One further observation must be noted before we turn to the consideration of human infertility We have been unable to find any mention of the birth of macerated fetuses in the literature, and Professor Castle has seen no such instance in the many years during which his laboratory has contained large numbers of rats on stock diet But in matings on our single deficiency diets four such deliveries occurred and there were two more in eight deliveries in which young rats who had been reared on the war diet were subsequently placed on ample diet and bred to Dr Castle's rats This fact corresponds to a single but suggestive clinical observation which will herewith be reported

HUMAN INFERTILITY

It is always unsafe to reason from one species to another, and the difficulties are increased when the organic constitution and life conditions of the one species are widely different from those of the other Moreover the experimental methods which are easily utilized in rats and which give us their individual indexes cannot be applied to the infertilities of the human race, but if clinical observations are found to yield results comparable to those of the experimental work each supports and reinforces the other The life conditions of the human race are much more complex than those of laboratory rats Human diet is much more varied and many factors other than diet enter into the maintenance of a state of general good condition In the well fed classes in this country the food placed upon the table is usually sufficient in all the essential elements, but peculiarities of taste or mistaken dietary theories not infrequently lead to the choice of a diet which is insufficient in one or the other of the vital elements

The history of a couple who were referred to us in 1919 offers a parallel to the miscarriages observed in our rats on deficiency diets

The husband was normal in every way and thoroughly fertile The wife was a large well nourished woman in ordinarily good health, but reported herself as lacking in energy and

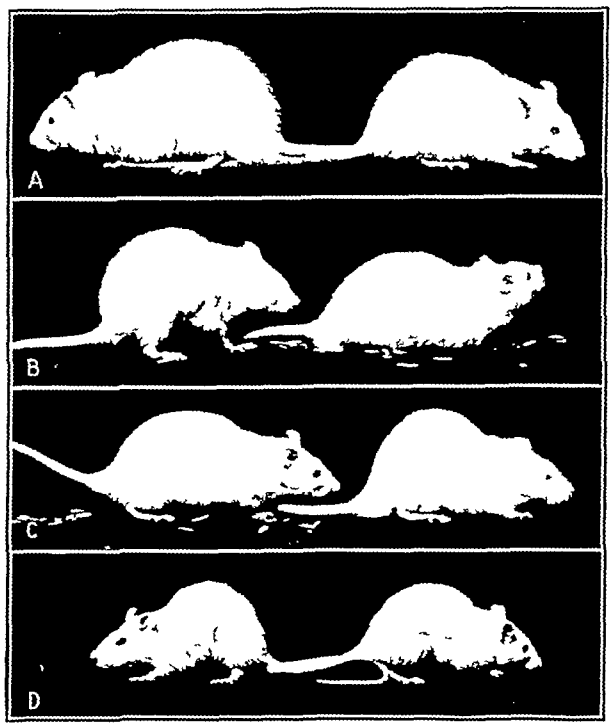

Fig 2.—*A* rats fed on stock diet *B* rats fed on low fat soluble vitamin diet *C* rats fed on low calcium diet and *D* rats fed on double deficiency or war diet

constantly tired, perhaps in a condition quite comparable to that of the single deficiency rats They had been married seven years Ten months after marriage, she was delivered of a full term child which was alive at the beginning of labor but died during an operative extraction During the succeeding six years she had five pregnancies which resulted in five early miscarriages These people were in the habit of maintaining a very ample table, and a deficiency in diet seemed absurd, but since an exhaustive examination failed to reveal any other cause for the habit of abortion, an inquiry was instituted

It was found that during her first pregnancy (which went to term) she had eaten everything but that finding herself growing stout soon after the birth of the child she had then begun to restrict her diet On analysis it proved that she had been living for the six years during which she had miscarried repeatedly on a diet which was very deficient in calcium She was at once put on large doses of calcium her diet was rearranged to include foods rich in calcium and after a reasonable interval the medicinal calcium was discontinued

4 Robinson Arthur Edinburgh M J 26 137 (March) 1921
5 Probably also certain permatozoa

She went into her seventh pregnancy shortly afterward and without any other treatment was delivered at term of a healthy child

No single case proves anything, but when this is considered in connection with the experimental work in rats and with similar results obtained by Steenbock[6] in swine and cattle it suggests the question whether

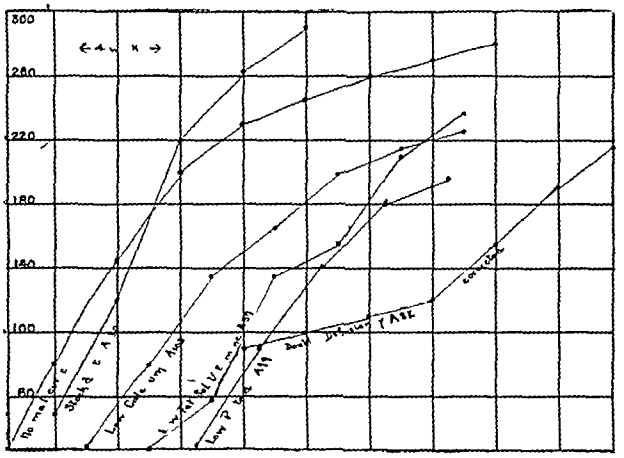

Fig 3 —Weight curves for male rats

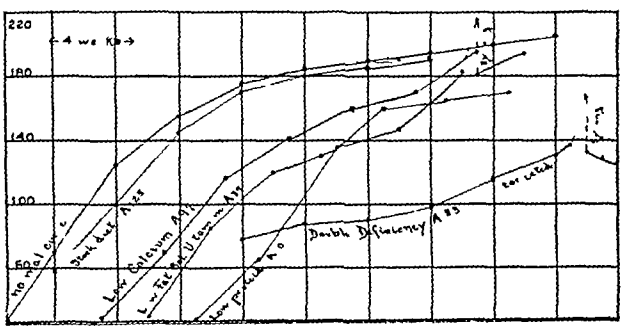

Fig 4 —Weight curves for female rats

dietary deficiencies may not be worthy of consideration in other cases of habitual abortion in the human race

In laboratory animals the importance of individual peculiarities has been but little, if at all, investigated In human beings individuality is a very important factor We have seen a number of cases of infertility in young athletes who have abandoned training and gone into sedentary business life It seems probable that such men acquire or possess a necessity for the ingestion of a large amount of proteins and the exercise which is necessary to carry them off, and that with a change in habit they fail in fertility

In March 1920, a young couple were referred to us from New York for analysis of their case They had been married four years, and pregnancy had occurred shortly after marriage but had terminated in a miscarriage at three months There had been no further pregnancies The wife appeared to us to be probably fertile, the husband's semen had been examined several times by a well trained physician and considered normal because the field always contained spermatozoa in active motion On more careful examination we found that their numbers were far below the normal, the percentage of motility was small and the character of motility was poor The heads of most of them contained an abnormally small amount of chromatin From our experience with similar cases we believed him to be decidedly infertile He had been a well known college oarsman, and had rowed for five years, eating during a large portion of each year the enormous supply of proteins of a training table He had then entered a professional school, had changed suddenly to a sedentary life and to very hard mental work He had married in the first year of this regimen, and though he had promptly impregnated his wife, the pregnancy was unsuccesful (remember the miscarriages in the rats) and no further impregnation occurred It proved on inquiry that he was at the time of his visit thinking of devoting the next six months to a graduate course which would mean easy work with ample time for exercise He was also at the time under pressure to join a crew which was then training for a race a few months later On our recommendation he decided to adopt this plan of three months' training with only moderate intellectual work and to return at the end of the three months for reexamination of his semen The case fails in completeness from the fact that the second visit proved unnecessary as the wife found herself pregnant at the end of two months and a half We *have recently heard that she was successfully delivered at* term

In the human race nervous overstrain plays an important part in loss of good condition This appears to be equally true in both sexes, but can be more accurately observed in the male by examination of the semen

In December last we were consulted by a couple who had been married five years without a pregnancy The wife had been operated upon for local abnormalities but without result, and their physician was confident that the persistent infertility was due to defective fertility on the husband's side He was leading a sedentary life with very heavy business responsibilities He was about 18 pounds under the preferable weight of the insurance tables and had a low diastolic blood pressure He was pale and decidedly nervous in manner and appearance His testicles were very soft and decidedly small, a fact which we have noted repeatedly in cases of lowered fertility both in the human race and in the rats Secretion obtained by massage of the vesicles and prostate was extremely watery

Fig 5 —Section of testis from rat made sterile by low fat soluble vitamin diet × 500

It contained a few leukocytes and not even a normal amount of prostatic salts Examination of his semen revealed almost no spermatozoa, and those mostly still He looked well except for his evident nervousness He was advised to absent himself from business, to live in the open air to go into light training under the advice of a professional trainer and to play golf and tennis in increasing amount as his condition improved This advice was strictly carried out under extremely favorable circumstances Four months later his

6 Hart E B and Steenbock, H J Biol Chem **39** 209 (Sept) 1919 Steenbock and Humphrey Research Bull 49 Wisconsin Experiment Station

semen was reexamined by his physician and the report sent us showed that numerically there were from 75 to 100 spermatozoa in a high power field—a very fair number We should judge from the report that their motility was good, and no abnormality was detected No pregnancy has as yet occurred, but so great an improvement in a short time is fair testimony that his previous seminal condition was purely functional and the result of an overstrained nervous condition

Fig 6—Section of ovary from rat made sterile by low calcium diet × 300

In human beings normal assimilation of the food ingested seems to be as important as the mere choice of food eaten, constipation is always important, and we have seen three cases in which deterioration of general health from intestinal retention was apparently the sole cause of infertility

March 6, 1919, we were consulted by a young couple who were becoming worried because they had been married for ten months without pregnancy The husband was in excellent health, the wife considered herself well but admitted that she was 'run down" Her complexion was pale and pasty looking she had been for some months troubled with persistent acne she complained of backache and a sensation of weight in the pelvis

On the table a satisfactory examination was prevented by the fact that an enormously overloaded sigmoid occupied almost the entire pelvis Under liquid petrolatum forced catharsis and increased ingestion of water the bowels were gradually emptied and at the end of a month were moving regularly under mild catharsis The vagina and cervix had been considerably congested, evidently from obstructed pelvic circulation, and she had for some weeks been instructed to use vaginal suppositories of boroglycerin at night At the end of eight weeks she was in greatly improved general health and they were to report after her impending period for a complete sterility examination This period failed to appear, she proved to be pregnant and was delivered of a living child at term

A decision that a given infertility is dependent on anatomic cause and demands operation should not lead to neglect of accessory constitutional conditions

In September, 1913 we examined a husband and wife who had been married three and one-half years without a pregnancy Examination revealed that the husband was thoroughly fertile but the wife had an anteflexion of a much underdeveloped cervix The cervical mucus was retained, inspissated and sticky All the spermatozoa found in the cervix were entangled and unable to progress The uterus was in right lateral version and there was a cystic right ovary She was suffering from severe dysmenorrhea and sense of pelvic weight Operation was recommended, and both a plastic and an abdominal operation were performed Good results were obtained with an excellent convalescence The dysmenorrhea and bearing down sensation were relieved and general health improved, but no pregnancy resulted Two years later reexamination showed that the cervix was patulous, the secretions normal and that the spermatozoa penetrated well abundant numbers being found even at the fundus in postcoital examination Everything local looked normal but pregnancy had not occurred The patient, though improved in general health was nearly 20 pounds under the insurance weight, tired easily and was still pale and nervous She was in health but in poor condition She was put on a regulated diet designed to increase weight in combination with regulated exercise Under this regimen she gained 10 pounds in two months and went away to continue the treatment A year later she reported that she was six months' pregnant and she was subsequently delivered at term

This patient was treated before our attention was called to the specific effects of diet but is selected in illustration of our belief that many of our failures in past years were due to neglect of constitutional ill health in cases in which local abnormalities of etiologic importance had been relieved by minor or operative treatment

COMMENT

The necessity for brevity forbids the report of further cases, but these have been selected as typical instances

That many individual infertilities are functional rather than due to anatomic or pathologic causes that very moderate decrease of fertility in both individuals may produce a completely infertile mating, and that, as was fully proved in our breeding experiments, two rats that are infertile to each other may both be fertile

Fig 7—Section of normal testis × 500

to other individuals, not because of obscure incompatibilities, but merely because of a decreased percentage of fertility in each, are points worthy of much consideration [7]

321 Dartmouth Street

7 For the effect of diet on reproduction on which this paper was based see McCollum E V The Newer Knowledge of Nutrition New York the Macmillan Company 1918 Osborne and Mendel J Biol Chem **35**, 1918 **41**, 1920 Science **45** 294 1917, J Biol Chem **23** 439 1915 **20** 351 1915

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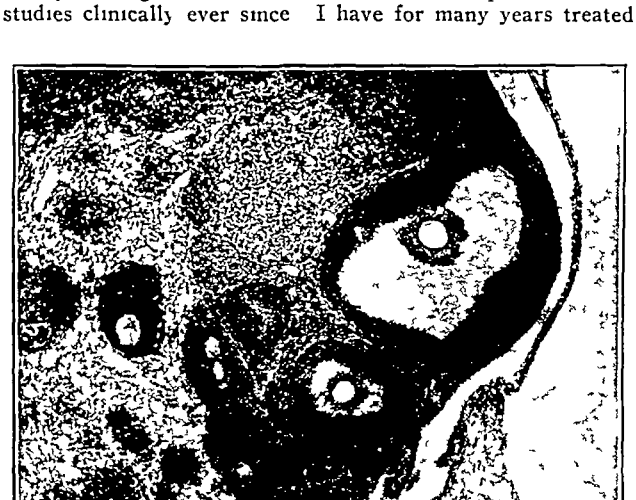

FIG 8.—Section of normal ovary × 300

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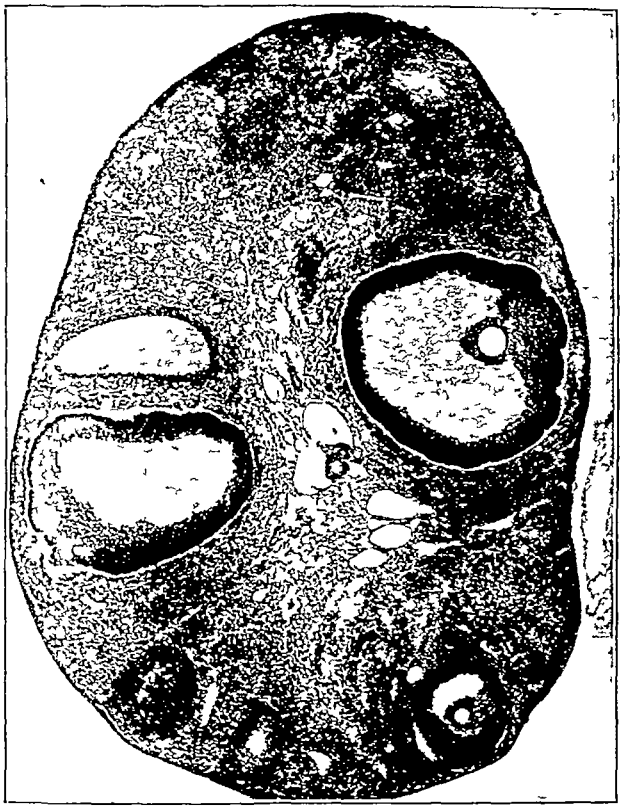

FIG. 9.—Section of ovary from rat made sterile by war diet × 300

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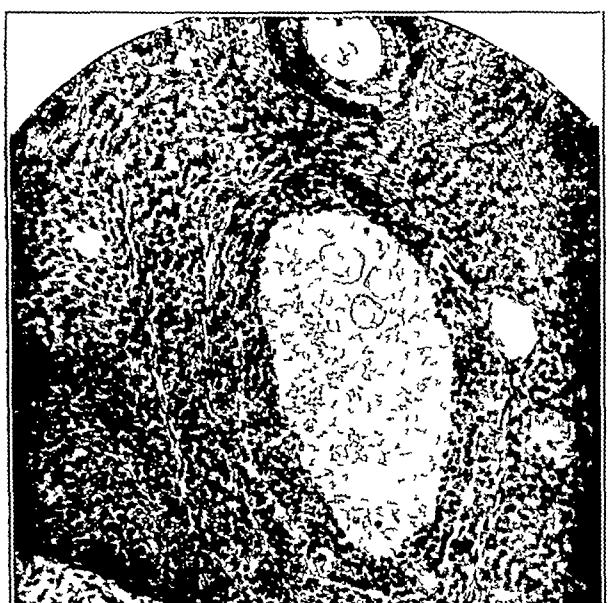

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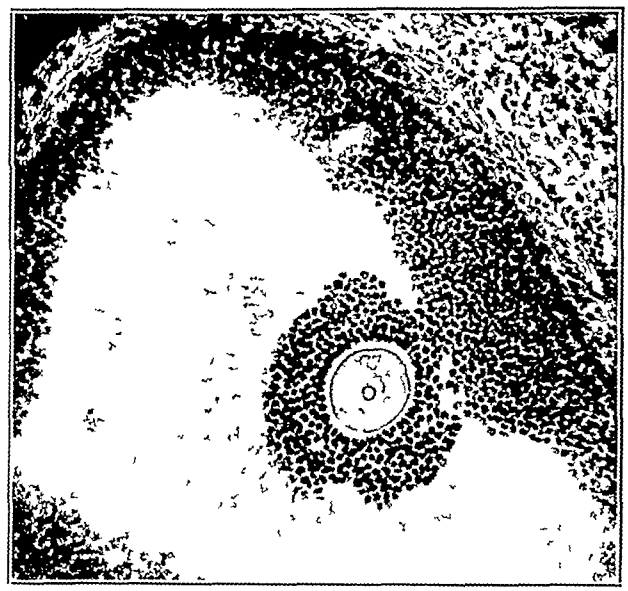

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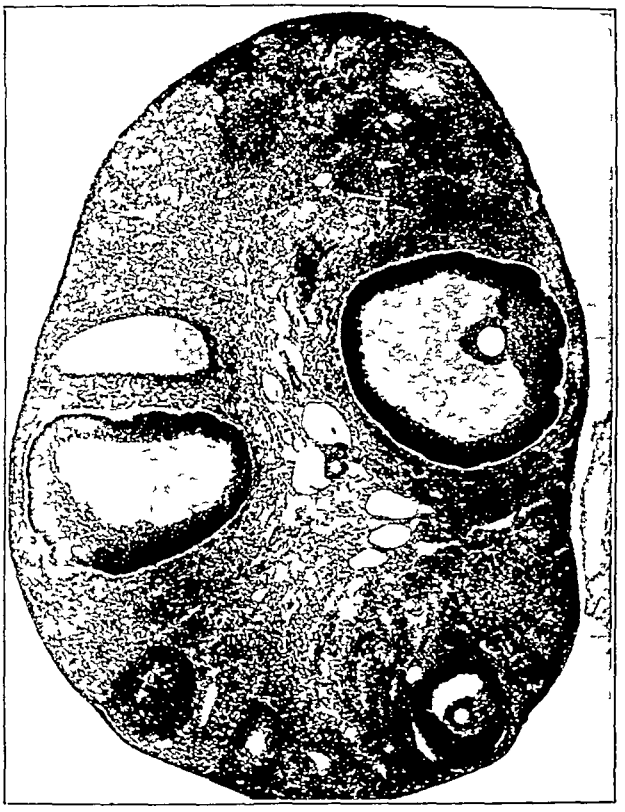

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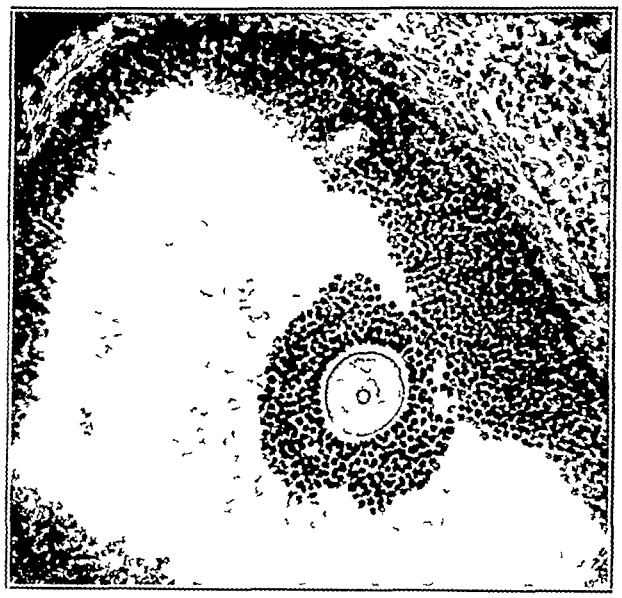

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A NEW METHOD OF TREATING RECENT FRACTURE OF THE OS CALCIS

DAVID C STRAUS M D
CHICAGO

Fracture of the os calcis is a rather common type, comprising approximately 2 per cent of all fractures In the great majority of cases it is due to a fall from a height, the patient landing on his feet, on some hard substance, such as the ground When the foot strikes the ground, the os calcis is suddenly held rigid while the weight of the body is transmitted to the astragalus, which acts as a wedge The tuberosity of the os calcis is forced upward by the impact As a result, the line of fracture usually extends downward from the concave articular facet beneath the wedge-shaped articular surface of the astragalus Not only

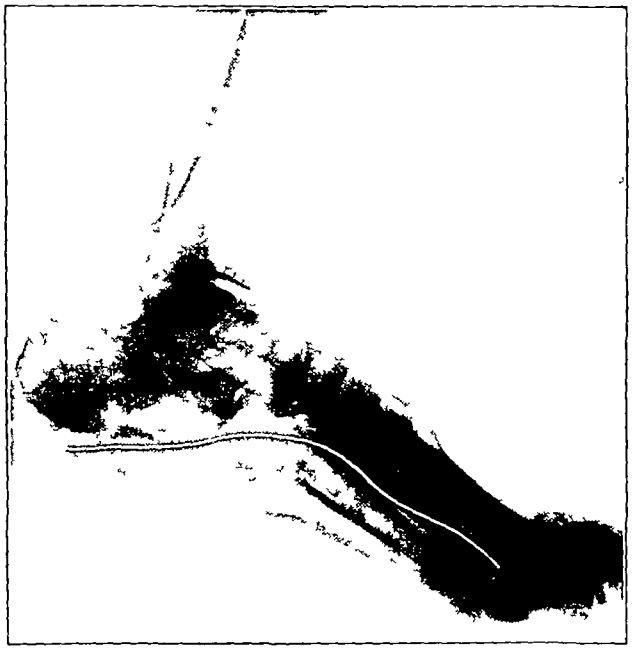

Fig 1—Most common type of fracture of os calcis flattening of longitudinal arch of foot and typical upward displacement of tuberosity of os calcis

is the posterior fragment of the os calcis driven upward by the impact at the time of fracture, but it is held in this position by the constant tone of the Achilles tendon The latter presents the chief obstacle to reduction The longitudinal arch of the foot gives way at the time of fracture, with a resulting traumatic flat-foot (Fig 1) Any logical form of treatment must be directed to overcome these two deformities [1]

I have recently evolved the following method

The patient is placed on a Hawley table so that traction can be made with the patient held stationary A general ether anesthesia is employed Subcutaneous tenotomy of the Achilles tendon is performed A long Steinmann pin of the latest model which screws together at its center is used This is sterilized with the two halves unscrewed Before the two halves are screwed together, the threaded ends are dipped in sterile oil After the pin has been screwed together, one of the sharp ends is held by placing it in the metal handle used to introduce the pin After the upper surface of the body of the os calcis immediately in front of the Achilles tendon on the medial side of the foot has been palpated, the Steinmann pin is pushed through the skin, from the medial to the lateral surface of the heel, so as to avoid striking the posterior tibial vessels, and so as to lie immediately above the body of the os calcis and immediately anterior to the Achilles tendon The pin extends an equal distance beyond each side of the foot (Fig 2)

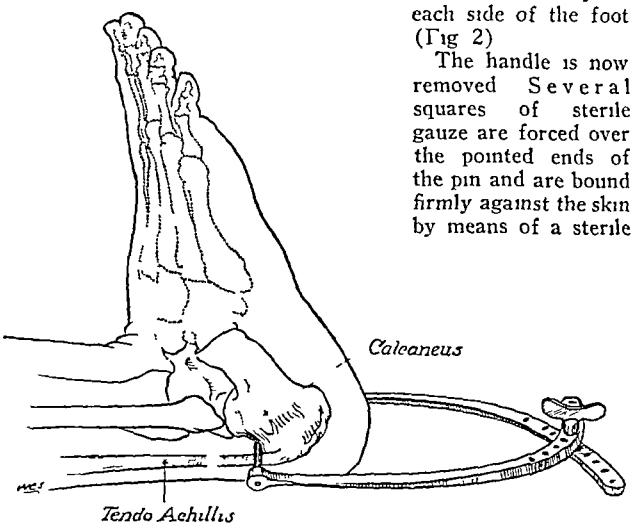

Fig 2—Diagram to show point of insertion of Steinmann pin and method of application of calipers The Achilles tendon is divided before the Steinmann pin is inserted

The handle is now removed Several squares of sterile gauze are forced over the pointed ends of the pin and are bound firmly against the skin by means of a sterile gauze bandage to guard against the possibility of infection when the plaster cast is applied

The Steinmann caliper is now applied to the pin and downward traction is effected by an assistant who stands beyond

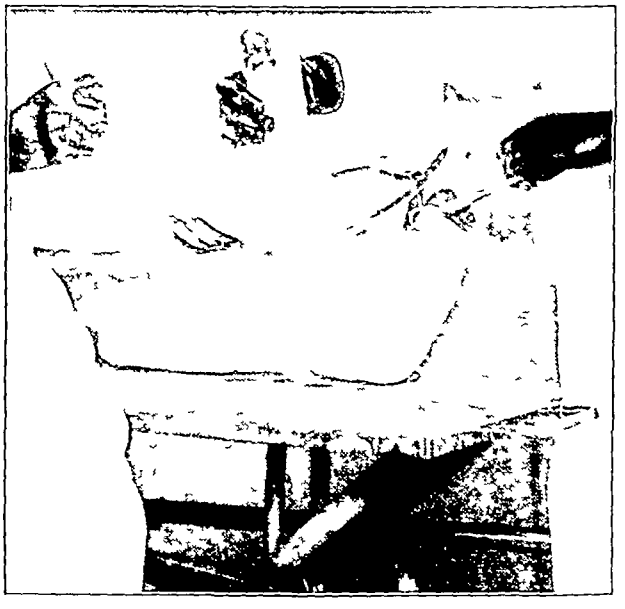

Fig 3—Manner of maintaining downward traction of posterior fragment while the cast is being applied Ordinarily the operator has two assistants one of whom maintains the downward traction on the posterior fragment as shown while the second supports the leg the operator applying the plaster bandage After the plaster bandage has been applied the operator uses the orthopedic block to maintain upward pressure under the instep and make any necessary correction in the position of the foot

the end of the table (Fig 3) The reduction is then made in the usual manner Any impaction present is broken up The posterior fragment is drawn strongly downward, while the anterior portion of the foot is forced downward and

1 A brief summary of and reference to the more important recent articles on the subject may be found in the chapter on fractures in Keen's Surgery 7 441 1921 contributed by Dr Eisendrath and the author

strongly inverted while counterpressure upward is made against the anterior fragment of the os calcis and the arch of the foot by means of an orthopedic block The block also aids in correcting the median displacement of the astragalus The foot is held in the corrected position, and sheet wadding is applied from the knee to the toes A plaster-of-Paris cast is applied, reaching from the tuberosity of the tibia to the heads of the metatarsal bones (Fig 3) While waiting for the cast to set, continuous traction downward is

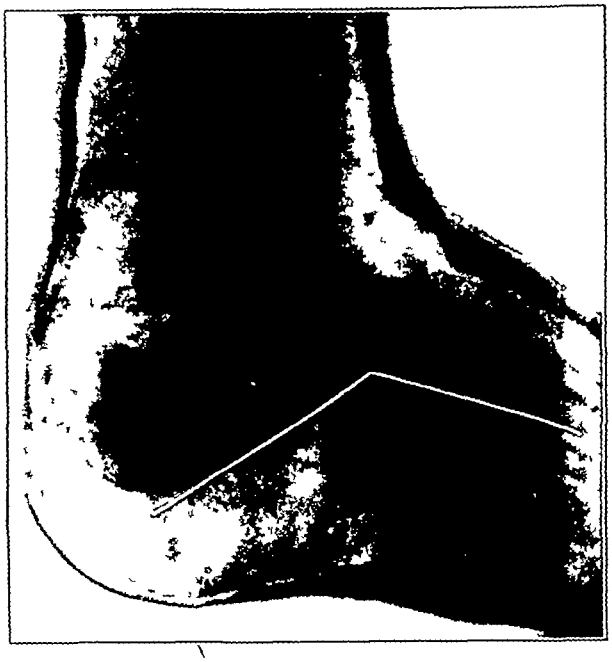

Fig 4—Same case as shown in Figure 1 after reduction, with cast applied and set, and pin removed

maintained This constitutes the great advantage of this method While this downward traction is being maintained, upward pressure on the anterior fragment and the instep is maintained by use of the orthopedic block, care being taken to hold the astragalus in its proper position This position is maintained until the plaster has set The Steinmann pin is now unscrewed and each half is removed Since the two portions of the pin are removed from within outward there is no danger of infection This is further guarded against by injecting, with a medicine dropper, a few drops of tincture of iodin through the holes in the plaster cast left by the removal of the pin

The cast is left on for four weeks It is then removed and passive motion is begun, together with massage and hot foot-baths daily The patient is not allowed to bear any weight on the foot till the end of ten weeks He is then fitted with an arch support, and begins to walk with the aid of crutches

The chief advantage of this method is that it permits continuous downward traction of the posterior fragment and upward pressure of the arch, with the foot held in the proper position, during the entire time necessary for the plaster cast to be applied and to set

30 North Michigan Avenue

Radium in Cancer—The report of Dr Harvey R Gaylord, director of the Gratwick Cancer Laboratory in Buffalo to the state legislature shows encouraging results from the state's purchase of $250 000 worth of radium Of 537 cases treated many apparently hopeless, 358 showed marked improvement The effectiveness of the remedy, according to Dr Gaylord, is due to a sufficient quantity of radium for a given purpose and improved technic in its application The laboratory will soon install a roentgen-ray apparatus with higher penetrative power than used heretofore

CARCINOMA DEVELOPING ON GASTRIC ULCER *

CHARLES H MAYO, M D
ROCHESTER MINN

Cancer continues to take its deadly toll from human life In this country more than 80,000 die yearly from the disease, nearly a million lives have been thus sacrificed in the last decade Cancer is the dread disease of middle life and of old age, made so by the prolonged suffering which accompanies it The dread is far worse than the brief period of fear in times of pestilence, or of fear of sudden death from cardiac disease Whether the increase in the disease is real from some defect in advancing civilization, or whether it is more apparent because of increased knowledge from closer observation, and more accurate statistical reports is a question The work of the Committee on Cancer Research of the American Medical Association and various commissions composed of interested investigators has done much to educate the public concerning the condition, its treatment, and especially its prevention Members of the medical profession are paying greater attention to the relief of recurring chronic local inflammation and to the removal of sources of local irritation, believed to be concerned in the development of cancer Through these influences, a greater number of patients appear for operation earlier, at a time when the disease is curable Cancers, from the standpoint of heredity, while they are interesting in lower life, are fewer than the general law of averages in man

HISTORICAL

A review of the literature concerning cancer is exceedingly interesting from a historical standpoint and calls to mind that old saying, "There is nothing new under the sun" The earliest records concerned only the treatment of the disease In Egypt, India and Persia the condition was recognized 1500 B C, when

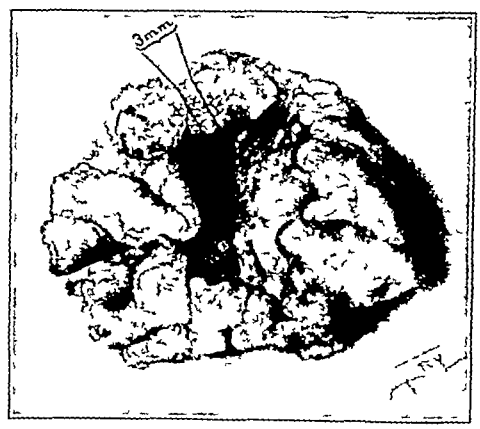

Fig 1—Carcinoma 3 mm in diameter on the border of a gastric ulcer 2 5 cm by 2 cm by 0 5 cm in diameter

the Egyptians applied arsenic paste in its treatment, a remedy used internally many centuries later Hippocrates excised cancer with the cautery more than four hundred years B C, a method still in use as a general destroyer of carcinomatous tissues Celsus at

* Read before the Section on Surgery General and Abdominal at the Seventy Second Annual Session of the American Medical Association Boston June 1921

the time of the birth of Christ employed the knife for the clean dissection of cancer, and vessels were ligated to check the growth of inoperable tumors a method revived a few years ago by the late Dr Dawburn of New York In the second century, Leonides used the knife and cautery in clean dissections From that time little was added to the treatment of cancer until the recent development of serum therapy, endocrine therapy, roentgen-treatment and radium emanations From what has been accomplished in the brief period of their use, especially by radium, I predict the possibility of surgery becoming an adjunct to these methods instead of the major method of treatment

ETIOLOGY

From the point of view of etiology, Galen, in the second century, considered that the body consisted of solids and four fluids, blood, mucus, yellow bile and black bile He believed that the concentration of the latter was the cause of cancer, a theory which held sway for many centuries, when it was refuted by Paracelsus who substituted that of a local concentration of mineral salts as an exciting cause of the disease If we substitute cholesterol for mineral salts we have a modern point of view for special stimulus of cell growth The seventeenth century witnessed the development of the lymph theory of cancer, in which the lymph node involvement was given some prominence The acid theory, namely, acid as a stimulus to cell growth, which is under discussion at the present time, was advanced in Germany at an early period by Helmont and by Ettmuller

Fig 2—Low power photomicrograph of (*a*) carcinoma on the border of the ulcer associated with (*b*) marked lymphocytic infiltration and fibrosis

In a consideration of this theory, it should be appreciated that in the normal acid areas of the body occur the greatest number of cancers, thus, in the organ of highest acidity, the stomach, are probably one third of the cancers of men, and more than one fifth of the cancers of women In the large bowel are many cancers as compared with the few in the alkaline small bowel In the urinary bladder, tumors are common, as they are in the uterine cervix, which is bathed by fluids of increased acidity during the ten years preceding and following the climacteric Within the tissues subject to normal degeneration, such as the uterus and the mammary gland, the acids formed by lipoid degeneration, a well known chemical process, may be a possible local factor to stimulate cell growth In this connection the work of Loeb in pathogenesis is of interest He immersed the unfertilized eggs of sea urchins in sea water acidulated to 1 per cent with various acids, of which butyric acid was the most active, and then returned the eggs to sea water for development, and a goodly percentage of the eggs became fertilized and hatched

The general use of the microscope, from its development in 1592, made possible a minute study of the disease, and education advanced rapidly as the printing press recorded hypotheses and facts The influence of coal smoke impregnated with sulphur has been extensively investigated in several districts of England and also in our own country as a possible external factor increasing the development of cancer In 1775 Pott described the first occupational cause of cancer, the work of the chimney sweep Several instances of such development have been noted since then The influence of fluids bathing cells in cancer environment was recorded by Maunvir in 1820, he asserted that the cells arise from morbid fluids which bathe them While this is now refuted for cancer, it is believed by some including myself, that a change, not necessarily morbid, in the fluid bathing the embryo, is a possible cause of congenital or embryologic malformation Malformations of the nervous system in fresh water frogs were studied by Loeb by developing their fertilized eggs in 0 6 and 0 7 per cent solutions of salt water

PROGRESS IN INVESTIGATION

The importance of recurring local inflammation as a field for cancer development was appreciated by Broussais Recamier investigated infiltration, and used the word metastasis in describing growths arising from parent tumors Virchow developed an accepted foundation for the study of cancers and other tumors He stated, in 1860, that all cells come from preceding cells, but he made the mistake of believing that connective tissue changes into epithelium, a theory which was opposed by Ramek The cell changes from the normal through stages of involution with impairment of nutrition and loss of functional capacity, as seen in cancer, were described by Thiersch Waldeyer advocated the theory of connective tissue isolation of a few epithelial cells, either internal or external, as the origin of cancer, which harmonizes with Thiersch's theory of nutritional changes, and was also strongly supported by Ribbert, and showed that it harmonizes with the origin of cancer of the stomach in isolated cells separated in the snare of connective tissue in a chronically inflamed field He also demonstrated the foundation of secondary tumors as a continuous growth through blood and lymph vessels as well as transmission by cell emboli

Clinical observations concerning such distribution of cancer of the stomach show that approximately 20 per cent, or more, of such cancers are confined to the stomach until the death of the patient from obstruction, perforation and peritonitis In these cases there is no clinical evidence of metastasis in the lymph glands, liver, and distant or adjacent viscera They compose a group favorable for operation with increased prospect of permanence of cure, except as the operation is modified by the extent of the involvement or the high location of the disease

Ewing in his excellent work on malignant disease in discussing glandular involvement in gastric cancer, quotes Verse as finding accidentally, at necropsy, twelve cases of early cancer of the stomach without glandular involvement, and Cuneo as finding lymphatic invasion at necropsy in eight cases of gastric cancer, but in thirteen gastrectomies only two The theory of tumor development from misplaced embryonal cells, known as Cohnheim's theory became obsolete following Waldeyer's work, although the statement of Durante

made in 1874, that all tumors arise from embryonic cells or immature cells and that tumor cells have some relation to sex cells is generally acceptable In plant life nothing more is required to stimulate local areas into normal tissue growth than extensive cell destruction, the injury or loss of epithelium itself is apparently one of the greatest stimulations to activity of reproduction of marginal cells, for example, callus development and normal repair of injury The theories of bacterial and parasitic causes of cancer development as originally advocated have not been proved I believe that the chemical action of bacteria and not their mere presence should be considered as an irritative agent of connective tissue formation and a possible source of chemical stimulation, such as toxin or other product of their activity The specific bacterial agent of several diseases has been discovered within but a few years after many years of search

Clinical observations show that the previously traumatized epithelial areas are much more susceptible than normal epithelial areas to the development of cancer for example, cancer of the uterine cervix, following laceration, cancer of the lip in areas of chronic irritation from a fissure or herpes, cancer of the tongue or cheek from a broken tooth as an irritant, the degeneration of scar tissue, cancer of the gallbladder, which is associated with gallstones in more than 85 per cent of cases, and ulcer of the stomach, in the larger number of which with a diameter of 2 cm or more, according to MacCarty and Broders, the margins are involved by cancer W J Mayo, in 1915, called attention to the hot foods and drinks taken as civilization developed a change from the food intake of primitive people, the degree of heat often being greater than epithelium can stand He explains the fact that fewer women have gastric cancers, since in serving the members of their household their food becomes cooled before it is taken There is but little difference of opinion with regard to external cancer of the breast or lip The clinician, the surgeon, and the pathologist see them in approximately the same stages, and they see 63 per cent of cancers of the lip developing on areas of previously repeated or chronic inflammations without comment

Fig 3—Low power photomicrograph of an area of (a) carcinoma lying near a lymph follicle in border of ulcer

In discussing cancer of the stomach originating on ulcer, it is probably best to drop the percentage basis, since pathologists obtain material for examination at necropsy, of late gross lesions from which the patient died, or of material removed surgically, and are dependent largely on the point of view of the local clinicians and surgeons with regard to the excision of the ulcer or its destruction, regardless of whether a gastro-enterostomy, or a pyloric operation is performed The removal of ulcers by cautery (Balfour) has largely replaced excision, hence it is more difficult for pathologists to secure early specimens for examination, and instead of discussing the real problem of a possible source of cancer of the stomach, time is wasted on the discussion of the percentage of cancers of the stomach that might develop in this manner, often with their judgment based on seeing the conditions in the late stages The modern cytobiologist has wonderfully advanced the use of the microscope in the study of the single cell, and thus with extensive experience, is often able to diagnose cancer on the evidence of a single cell or a few cells, this, however, by immediate examination of frozen fresh tissue

In the period of evolutionary life, when two or more types of cells became grouped to develop multicellular life and live a community existence, was the control over the cell a community control or an individual cell control? If it were a community control, then Cohnheim's theory of misplaced embryonal cells as a cause of the origin of cancer would be worthy of serious consideration If it is possible that the cell is controlled by some granule within the cell, it might be exhausted or fail to appear in both parts of a cell division when exhausted by a chronic stimulus to division I believe a biologic cause of cancer is exhausted epithelial areas induced by age chronic traumatism, or irritation, an activating agent would be the environment, such as acid, especially butyric, one of the combined acids of the stomach and a product of lipoid changes

THE DEVELOPMENT OF CANCER

MacCarty says

Insofar as cancer (a migratory hyperplasia) is concerned, my observations have revealed a biologic reaction which is malignant only insofar as it destroys the communistic organization of cells

The three fundamental biologic reactions to destruction (hypertrophy, hyperplasia, migration) have been found to occur not only in relation to the specific tissue of the breast, but also in relation to the specific tissues of the prostatic gland, skin, hair follicles, stomach, lymphatic glands, blood, bone cartilage, and connective tissue In all these chronic destruction (the biological etiological factor in cancer) of the specific tissues, calls forth hypertrophy, hyperplasia and sometimes migration of the reserve cells

Although these reactions may seem new in reference to human pathology, they are well known to biologists who have made a study of reaction to destruction In fact, many biologists are of the opinion that exposure of living matter to destructive factors has led to adaptive potentialities that are the factors of safety in the structure and functions of all forms of life, nature has been just as efficient in her defensive preparation in the construction of the human body

It may be stated as a biologic law that hypertrophy, hyperplasia and migration are stimulated primarily by destruction These phenomena are the effects of which destruction is the cause

In nature the specific agent of destruction is rarely if ever anticipated In the mammary gland and stomach destruction is the main factor, as it is with the other tissues which have been studied

The reactionary cells of the three conditions described are apparently normal cells which answer the structural description of normal cells as found any place in nature Their relation to the communistic organization of cells is their principal abnormal or pathologic characteristic

It has been observed that nature provides for the regeneration of human tissues in two ways, which might be called direct and indirect the former consisting of division of specific tissue cells and the latter of the division of reserve cells which are set aside for the purpose of regeneration of specific

tissues by the process of multiplication, specialization and differentiation Direct regeneration of tissue represents the most primitive form of reproduction and doubtless occurs in the reproduction of endothelial tissues and perhaps some others, the reserve cells of which have not been seen Indirect regeneration is seen in such specific tissues as those represented by squamous cells of the skin, secretory cells of the sebaceous, sweat and mammary glands, fibrous connective tissues lymphocytes, erythrocytes, osteocytes, chondrocytes and glandular cells of the prostate, all of which specific tissues possess reserve cells which have been seen During chronic destruction of these tissues the reserve cells react in a definite manner with a certain sequence characteristic of the behavior of living cells throughout nature They become hypertrophic, hyperplastic, and migratory In the light of biology these may be interpreted as hyperactivity against antagonistic things or forces, increase of mass action against such antagonists, and attempt at change of environment all of which are defensive reactions and constitute the essential means of self-preservation

The exact starting point of cancer of the stomach is, and probably will remain, unknown, but the early cancers which have been observed in this organ have been seen in the mucosa in the borders of chronic ulcers (Fig 1)

One finds simple chronic gastric ulcers in which there are no signs of cancer, one also finds similar ulcers in which the normal columnar cells of the gastric tubules are partially or completely replaced by spheroidal or ovoidal undifferentiated cells the cells being intratubular One also sees similar ulcers in which the ovoidal or spheroidal cells are also extratubular and hence in the stroma (Figs 2, 3 and 4)

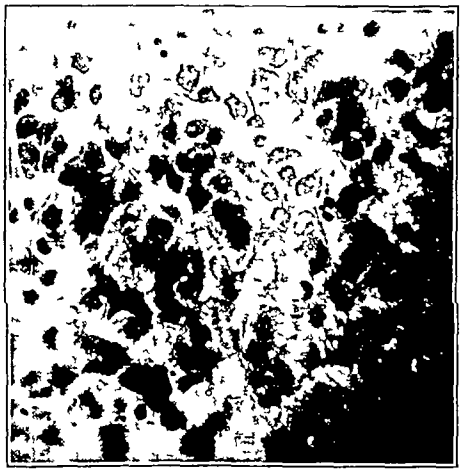

Fig 4 —High power photomicrograph of the carcinomatous area shown in Figure 3

Williams states that 60 per cent of cancers of the stomach occur at the pylorus, where only 12 per cent of ulcers occur Welch reports 36 5 per cent of ulcers just above the pylorus, where 12 per cent of cancers occur This shows the greater influence of trauma on fewer ulcers in the more active areas of the stomach In considering the influence of environment, practically five ulcers occur in the acid-reducing first portion of the duodenum to one in the stomach At the Mayo Clinic during the years 1919 and 1920, 3,463 duodenal and gastric ulcers were diagnosed Of these 1,673 were operated on Fifty-eight patients had both gastric and duodenal ulcers, 1,352 had duodenal ulcer alone, and 263 had gastric ulcer alone The percentage of mistakes in diagnosis, as shown by operation, is exceedingly small The duodenum is resistant to cancer The few cancers in this region occur as a rule in adenomas, or in a duct entrance, rarely in ulcer The influence of the duodenal secretion which passes into the stomach through the gastro-enterostomy opening to some extent lowers the acid and changes the environment by overcoming retention This possibly has some effect in checking the effects of irritation of ulcer or even the activity of cancer Bamberger's statement, that of 1 025 patients who had gastro-enterostomies and who were observed for some time, only twenty-two developed cancer, should apply only to gastric ulcer If more than eight hundred duodenal ulcers are withdrawn from this number, the twenty-two patients will be equivalent to approximately one in six

In order to emphasize the greater danger from gastric than from duodenal ulcer the data from Hunter's report are summarized

OPERATIVE RESULTS

In Hunter's investigation in behalf of the New York Life Insurance Company to determine a basis for insurance following operation for gastro-enterostomy for ulcer, the results of 2,431 consecutive gastro-enterostomies performed during several years at our clinic were studied All but 108 patients were traced, twenty-two of whom had had ulcers of the stomach Five hundred and twenty-one patients with ulcer of the stomach were under observation for an average of three and six-tenths years The mortality was 17 per cent, the first year it was four and one-third times the death rate in a like group in the general population, the rate diminished during the remainder of the period One thousand, six hundred and fifty-one patients with duodenal ulcer were under observation for an average of three and four-tenths years, the mortality was 5 per cent, which is approximately that of the normal death rate of an equal number of persons in the general population of the same average age Ninety-one persons with gastric and duodenal ulcers were under observation for an average period of three and eight-tenths years, the mortality was 15 per cent It is impossible to state the exact cause of death in this group of cases as the patients die at their homes and definite reports are rarely obtained

There is a tendency to belittle the dangers of ulcer of the stomach The condition occurs less frequently than duodenal ulcer, but is more serious As a rule, ulcers of the stomach or the duodenum are not operated on early, but only after a complaint of some years' duration A wide variation in the sensitiveness of the abdomen exists in various persons, some with little trouble complain bitterly Often patients appear for a general examination because of loss of appetite, loss of weight and strength with increase in pallor and are found to have extensive cancer of the stomach without distress or appreciable bleeding In 1919 and 1920 at the Mayo Clinic a diagnosis of cancer of the stomach was made in 1,529 cases In approximately 54 per cent, the condition was considered inoperable because of the extent of the disease, metastasis, complications, and so forth In 162 an exploratory operation only was performed In seventy-four gastro-enterostomy was performed for the relief of obstruction as a palliative operation Two hundred and twenty-three patients were subjected to the radical operation of resection of the stomach More could have been done for many of the patients had the condition been recognized earlier

It will take years of observation to estimate fairly accurately the percentage of cancers which have occurred on ulcer, even if from one in twelve to one in six are thus developed I believe the percentage is higher Concering cancer in general, it seems

probable that we have sufficient data to show that several causes contribute to its development, and that irritation, partial destruction, and environment play the most important parts In this type of cancer some degree of protection can be given to the individual if the disease is recognized early and is relieved

The exact starting point of cancer of the stomach is unknown and probably will remain unknown, but the early cancers in this organ have been seen in the mucosa in the borders of chronic ulcers

Simple chronic gastric ulcers in which there are no signs of cancer are found Similar ulcers in which the normal columnar cells of the gastric tubules are partially or completely replaced by spheroidal or ovoidal undifferentiated cells, the cells being intratubular, are also found, as are ulcers in which the ovoidal or spheroidal cells are also extratubular and hence in the stroma

PROPHYLAXIS AND SERUM THERAPY OF YELLOW FEVER*

HIDEYO NOGUCHI, M D
NEW YORK

Experimental transmission of yellow fever to animals and the isolation of *Leptospira icteroides* was accomplished in Guayaquil in 1918,[1] and repeated confirmations have since been made During December, 1919, and January, 1920, Noguchi and Kligler, working in Merida, Yucatan, succeeded in transmitting yellow fever to guinea-pigs and isolating *Leptospira icteroides*,[2] and again in northern Peru later in 1920[3] In the summer of the same year, in Vera Cruz, Perez-Grovas[4] and his co-workers were able to produce experimental yellow fever and obtain cultures of *Leptospira icteroides*

The latest confirmation (January, 1921) comes from Le Blanc of the Rockefeller Institute, who has also successfully transmitted the disease from a patient in Vera Cruz to guinea-pigs and has obtained a culture of *Leptospira icteroides* The cultures obtained by Perez-Grovas and by Le Blanc have been sent to me, and I have found them to be identical with other strains of *Leptospira icteroides* Gastiaburu,[5] of the Instituto de Higiene of Lima, transmitted yellow fever to guinea-pigs from cases occurring during an epidemic in Piura, Peru, in 1919 Stimson,[6] of the U S Public Health Service, had demonstrated in 1907 the presence of a spiral organism, now identified as *Leptospira icteroides*, in a preparation, stained by the Levaditi method, of the kidney from a yellow fever patient dying during the epidemic in New Orleans in 1905

The symptoms and lesions produced in animals by the inoculation of *Leptospira icteroides*[7] closely parallel those of human yellow fever, and comprise mainly jaundice, hemorrhages and intense acute nephritis In the guinea-pig the degree of hemorrhage is very marked in the lungs and on the serous surfaces of the stomach and intestines, while minute hemorrhages of various dimensions occur almost constantly from the mucosa into the gastric cavity or intestinal canal In young dogs the hemorrhages of the lungs are generally slight, but the hemorrhages from the mucosa of the gastro-intestinal tract, producing so called "black vomit" and melena, make the picture almost identical with that of yellow fever in human beings The lesions produced in the marmoset, the only species of monkey which has so far been found to be susceptible to experimental infection with *Leptospira icteroides*, are intermediary between those of the guinea-pig and those of the dog While the distribution and degree of hemorrhage in the different species of animals varies, the more or less pronounced fatty degeneration of the parenchymatous cells of liver and kidney is always present

The specific immunity reaction for *Leptospira icteroides* demonstrated with the serums of yellow fever convalescents in Guayaquil,[8] Merida,[2] and Peru[3] constitutes further proof of the etiologic relation of this organism to yellow fever The existence of this property in convalescent serum led to a study of the possibility of preparing a specific immune serum for the treatment of yellow fever and to a consideration of the effect of the inoculation of killed cultures of *Leptospira icteroides* as a means of protection against the disease

SERUM TREATMENT OF YELLOW FEVER

The Serum Treatment of Animals Experimentally Infected—Preliminary therapeutic experiments with an immune serum,[9] prepared in the horse, in experimental yellow fever in guinea-pigs showed that the serum had definite value in checking the progress of the infection and that it was capable, when administered during the period of incubation, of completely preventing the development of the disease Moreover, when used in the early stages of infection it modified the course of the disease and prevented a fatal outcome At a later stage, however, when jaundice and nephritis had been present from two to three days and the animal was near collapse, the serum had no perceptible beneficial effect

The strength of the serum was such that, when injected simultaneously in a quantity as small as 0 001 c c , it had the power to neutralize 5,000 minimum lethal doses of *Leptospira icteroides*, that is, 1 c c of the serum was capable of neutralizing 5,000,000 minimum lethal doses It was found that infection could be prevented when 0 1 c c of the serum was injected at any time during the period of incubation (i e , within seventy-two hours after inoculation) After onset of fever, that is, ninety-six hours after inoculation, the same amount of serum either arrested the progress of the infection or modified its course to that of a nonfatal infection On the other hand, as much as 1 or 2 c c of the serum failed to prevent fatal termination of the disease when administered after the animals had reached the stage of intense jaundice, descending tem-

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* From the Laboratories of the Rockefeller Institute for Medical Research

1 Noguchi Hideyo Etiology of Yellow Fever Papers I XII J Exper Med **29** 547 596 (June) 1919 **30** 1 29 (July) 1919 **30** 87 93 (Aug) 1919 **30** 401 410 (Oct) 1919, **31** 135 168 (Feb) 1910, **32** 381-400 (Oct) 1920

2 Noguchi Hideyo and Kligler I J Experimental Studies on Yellow Fever Occurring in Merida Yucatan J Exper Med **32** 601 (Nov) 1920 Immunological Studies with a Strain of Leptospira Isolated from a case of Yellow Fever in Merida, Yucatan ibid **32** 627 (Nov) 1920

3 Noguchi Hideyo and Kligler I J Experimental Studies on Yellow Fever in Northern Peru, J Exper Med **33** 239 (Feb) 1921 Immunology of the Peruvian Strains of *Leptospira icteroides* ibid **33** 253 (Feb) 1921

4 Perez Grovas P Experimental Transmission of Yellow Fever J A M A **76** 362 (Feb 5) 1921

5 Gastiaburu Personal communication to the author

6 Stimson, A M Note on an Organism Found in Yellow Fever Tissue Reports U S P H S **22**, Part 1 541, 1907

7 Noguchi Hideyo Symptomatology and Pathological Findings in Animals Experimentally Infected J Exper Med **29** 547 (June) 1919

8 Noguchi Hideyo Properties of Blood Serum of Yellow Fever Patients in Relation to Leptospira Icteroides J Exper Med **30** 9 (July) 1919

9 Noguchi Hideyo Serum Treatment of Animals Infected with Leptospira Icteroides J Exper Med **31** 159 (Feb) 1920

perature, hemorrhages and nephritis, and were nearing collapse

Serum Treatment of Yellow Fever in Man—The serum was first tried in the treatment of human yellow fever in September, 1919, when an American marine on the U S S *Chicago*, off Honduras, was treated by Dr W Lyster and Gen T C Pareja The next patient treated was the Mexican minister to Nicaragua, also by Drs Lyster and Pareja The results in these two cases were regarded by Lyster and Pareja, as well as by General Gorgas, who was also present, as definitely indicative of the value of the serum, and led to the treatment of other cases The total number of treated cases up to Dec. 31, 1920, is 170 (Table 1)

During a small epidemic occurring near Los Amates, Guatemala, in July, 1920, the serum was employed by Dr Vaughn in four cases, in three of them on or before the third day of illness, in the other later The three patients treated early all recovered, the other died In Salvador, forty-two patients were treated with serum by Dr Bailey, fourteen on or before the third day of illness Three of the fourteen, however, received a quantity of serum which, Dr Bailey states, was "too small to have any material effect" (20 c c in the course of the third and fourth days) These three patients died, the other eleven all recovered [10] Twenty-eight patients were treated later than the fourth day of illness, and in these cases the usual high mortality rate of yellow fever (46 per cent in this instance) was apparently unaffected by the use of the serum In Merida, eight cases have been treated by Drs Hernandez, Lara and Villamil, who report four recoveries among four cases treated with serum before the third day and four deaths among those treated later In Vera Cruz, in 1920 sixteen cases were treated with serum on or before the third day without any mortality, while three patients treated after the third day all died

TABLE 1—ANALYSIS OF ONE HUNDRED AND SEVENTY CASES OF YELLOW FEVER TREATED WITH ANTI-ICTEROIDES SERUM

	Treated on or Before 3d Day			Treated After 4th Day		
Group 1	Total	Recovered	Died	Total	Recovered	Died
Salvador 1920	14	11	3*	28	15	13
Guatemala 1920	3	3	0	1	0	1
Honduras 1919	1	1	0			
Mexico 1920						
Merida	4	4	0	4	0	4
Vera Cruz	16	16	0	3	0	3
Gutierrez Zamora	17	17	0	1	0	1
Peru 1920	4	3	1†			
Total Group 1	59	55	4 (6 7%)	37	15	22 (59%)
Group 2						
Tuxpan Mexico 1920	36	27	9 (25%)	38	21	17 (45%)
Total both groups	95	82	13 (13 6%)	75	36	39 (52%)

* Total of 20 c c in two days begun on the third day undoubtedly too small to have any material effect (Dr Bailey)

† Patient subjected to forced journey during first two days of illness disease extremely severe patient exhausted with severe nephritis when admitted to the hospital

In Gutierrez Zamora, Mexico eighteen patients were treated with the serum All recovered except one patient who did not receive serum until the end of the fourth day of illness In the same town there were three cases seen before the third day of illness but not treated with serum, these three patients died In Peru, four cases were treated early in the disease, with one death This last case was exceptional, however, in that the boy had been brought through a tropical desert after onset (a journey of thirty-six hours) and had severe nephritis when admitted to the hospital In Tuxpan, Mexico (Table 1, Group 2) seventy-four cases were treated with serum, thirty-six on or before the third day The results reported from Tuxpan are the least favorable of all those reported—nine deaths and

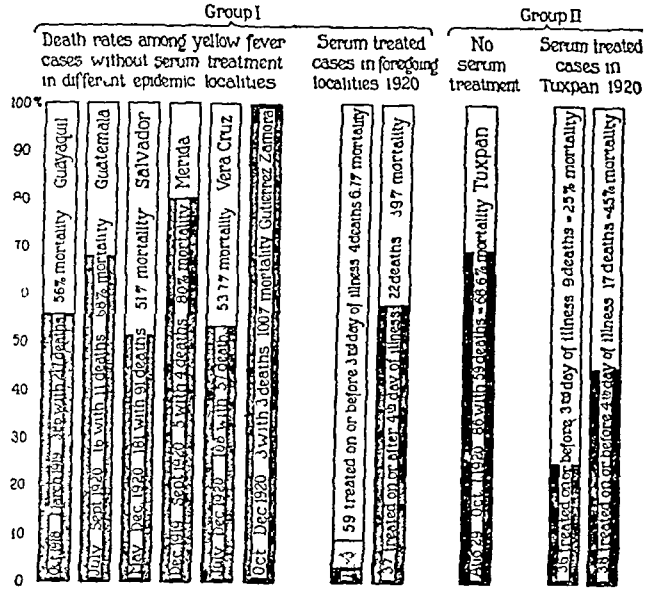

Chart 1—Death rates among yellow fever patients with and without serum treatment

twenty-seven recoveries (25 per cent mortality) The remaining thirty-eight cases were treated later than the third day, with twenty-one recoveries and seventeen deaths (45 per cent mortality)

An examination of the results of serum treatment in various localities shows a general agreement among them the earlier serum is given, the lower the mortality Exclusive of the Tuxpan series, fifty-nine patients were treated on or before the third day, of these, fifty-five recovered and four died It has already been explained that in three of the four cases in which death occurred, the total amount of serum administered during a period of two days was 20 c c , the fourth case is that of the Peruvian boy who was subjected to a long journey after the onset of fever The total mortality in this series was, therefore, 6 7 per cent In Tuxpan the mortality among cases treated early was 25 per cent (seventeen were treated on the third day alone, with 19 per cent mortality), while the death rate of later treated cases was 45 per cent The reduction in mortality among cases treated on or before the third day is undeniable On the other hand, the serum does not seem to exhibit any beneficial effect on the course of the disease when given after the fourth day of illness

For comparison there are given in Table 2 the death rates of cases not treated with serum during the various epidemics They vary according to the number of cases included in the statistics—the fewer the cases, the less reliable the percentages The lowest rate was in Salvador (51 per cent), the highest in Merida (80 per cent) and Gutierrez Zamora (100 per cent) Comparison of the mortality rates among these untreated cases with those of cases treated with serum on or before the third day brings out a great difference in favor of the treated cases which is difficult to explain on the ground of acci-

10 It has been recommended that when there is no danger of anaphylaxis, 60 c c of serum be given intravenously at the earliest opportunity

dental coincidence Apparently the serum actually helped to cut the infection short before it had caused irreparable injury to the organs, particularly the kidneys Once such injuries have been done, however, as is usually the case in severe yellow fever by the fourth day of illness, an antimicrobial serum cannot be expected to effect any restoration In certain of these cases, however, a marked improvement has been reported to have occurred after the administration of serum, owing probably to the fact that parenchymatous disorganization was proceeding slowly

TABLE 2.—DEATH RATES IN VARIOUS LOCALITIES AMONG YELLOW FEVER CASES NOT TREATED WITH SERUM

	Cases	Deaths	Mortality Percentage
Guayaquil, Oct., 1918-Mar. 1919	387	217	56.0
Guatemala July-Sept. 1920	16	11	68.0
Salvador May-Dec. 1920	181	91	51.0
Mérida Dec. 1919-Sept. 1920	5	4	80.0
Vera Cruz July-Dec. 1920	106	57	53.7
Gutierrez Zamora 1920	3	3	100.0
Tuxpan Aug. 29-Oct. 7 1920	86	59	68.8
Total	783	442	56.4

VACCINATION AGAINST YELLOW FEVER

Vaccination of Experimentally Infected Animals.—Early experiments showed that the injection of killed cultures of *Leptospira icteroides* into susceptible animals conferred on them a state of immunity which rendered them resistant to subsequent inoculation with virulent cultures [11] The duration of this immunity has been found to be at least five to six months, the maximum duration is yet to be determined

Vaccination of Human Beings.—The absence of any ill effects following the injection of killed cultures into animals led to the application of a similar procedure to human beings The results of the early experiments in Guayaquil have already been reported [11] The potency of the vaccine available at that time was rather low

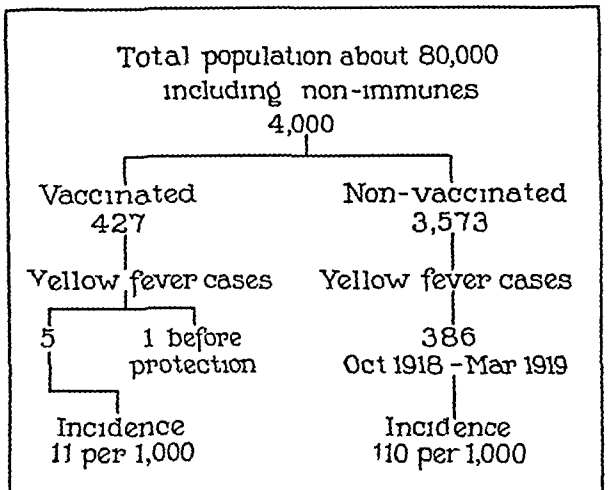

Chart 2.—Yellow fever vaccination Guayaquil Ecuador 1918 1919

(2,000,000 leptospiras per cubic centimeter, as compared with 2,000,000,000, which represents the concentration of the preparation now used), yet its protective effect was undeniable No cases of yellow fever developed among those persons who received 2 c c of vaccine The number of nonimmunes in Guayaquil was not definitely known, but a liberal estimate would place it at about 4,000 Of these, 427 were vaccinated of whom five later contracted yellow fever—a morbidity rate of 11 per thousand During the same period (October, 1918, to March, 1919) there were 386 cases of yellow fever among the unvaccinated, a rate of incidence of 110 per thousand (386 3,577) (Chart 2)

The strength of the vaccine, as already noted, has since been greatly increased, and preparations of many times the concentration of that used in Guayaquil have been employed by Lyster, Bailey and Vaughn in Guatemala and Salvador, Vasconcelos Casasus, Lynn and others, in Mexico, and by the department of health of Peru The additional number of persons vaccinated is about 7,500 The vaccine has been given in two subcutaneous injections of 2 c c each, when possible, although, as the table shows, circumstances often prevented the administration of the second injection The results of all vaccinations to Dec 31, 1920, are summarized in Table 3

TABLE 3.—VACCINATION AGAINST YELLOW FEVER IN MAN

	Number Vaccinated	Number Receiving Two Injections
Guayaquil 1918-1919	427	
U. S. S. Chicago 1919	75	75
Marines and others 1919	250	250
Amapala 1919	175	175
Salvador 1920	3,607	138
Guatemala 1920	1,383	592
Tuxpan Mexico 1920	2,000	2,000
Tambogrande, Peru 1920	47	
Total	7,964	3,230

The incidence of yellow fever among the vaccinated may be considered in two groups (*a*) those in whom the disease developed within a comparatively short time—from one to ten days after the time of the last inoculation, and (*b*) those in whom infection took place one month or longer after vaccination Since the longest incubation period in yellow fever in man, as experimentally determined by the French Yellow Fever Commission in Brazil, is twelve days, and the average from three to six days, the group of vaccinated individuals under Group *a*, that is, those who contracted yellow fever within from one to ten days after vaccination, must be excluded from a consideration of the protective effect of the vaccination On the other hand, the occurrence of yellow fever among vaccinated persons after the lapse of one month or longer would indicate inefficacy of vaccination as a prophylactic measure As the statistics given in Table 3 show, 4,230 persons received two inoculations of the vaccine, among these all the cases which occurred fall in the *a* group There were eighteen such cases, all of which showed the symptoms of yellow fever within from one to ten days after the last inoculation The remaining 3,734 persons received only one injection of vaccine, among the number, five typical cases of yellow fever (Guayaquil, 1918-1919 [11]) and five in which the symptoms were suspicious (Dr Bailey's report from Salvador, 1920) arose in from one to three months It has already been noted that the vaccine employed in Guayaquil was several hundredfold less strong than that used later in Central America and Mexico In addition to these ten cases there were also, in the single vaccination group, eight persons in whom yellow fever developed within from two to ten days after vaccination (one in Guayaquil, five in Salvador one in Guatemala, and one in Tambogrande, Peru)

The epidemic of yellow fever in Salvador broke out in May, 1920 Vaccination was begun in August, and

11 Noguchi Hideyo, and Pareja Wenceslao Prophylactic Inoculation Against Yellow Fever, J A M A 76 96 (Jan 8) 1921

up to Dec 31, 1920, 3,607 persons in the infected areas had been vaccinated, 138 of whom had received two injections of vaccine The total number of nonimmunes in the ten infected districts was, according to Dr Bailey's estimate, 113,000 Among those who received two injections of the vaccine, no case of yellow fever occurred In the group receiving a single injection, however, there occurred, within ten days after vaccination, as already mentioned, five cases which Dr Bailey regarded as suspicious of yellow fever, and, still later, five more suspicious cases Of the latter patients, three died and came to necropsy, but the diagnosis of yellow fever was not definitely confirmed During the same period 181 cases of yellow fever occurred among the nonvaccinated population (Chart 3)

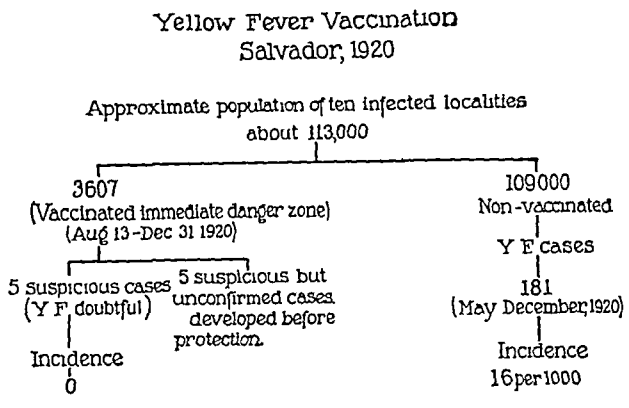

Chart 3.—Yellow fever vaccination Salvador 1920

In Guatemala, in the small town of Los Amates, with about 660 inhabitants, there were twelve cases of yellow fever from June to August, 1920 Vaccination was begun in August, and 617 vaccinations were carried out between August 20 and August 30 No case of yellow fever developed among the vaccinated, and only one among the few left unvaccinated at Los Amates The remainder of the nonimmune population was vaccinated, September 18, after which date no further case occurred At Virginia one case of yellow fever was discovered, September 7, and the entire population (350) was vaccinated, September 26-27 No further case occurred In Quirigua and Puerta Barrios, although no cases of yellow fever had occurred, 105 persons were vaccinated No case of yellow fever developed The total number of vaccinations in Guatemala was 1,383, and 138 persons received two injections (Chart 4)

In Tuxpan, Mexico, with about 6,000 inhabitants, eighty-six cases of yellow fever occurred during a period of thirty-nine days from Aug 20 to Oct 7, 1920, a morbidity rate of 14 per thousand Vaccination was begun, October 7, and during the subsequent twenty-nine days (October 7 to November 5) 2,000 nonimmune persons were vaccinated, among whom seventeen contracted yellow fever within from one to ten days after vaccination No other cases developed among the vaccinated during the epidemic period, which ceased in December, 1920 On the other hand, during a period of eighty-five days (October 7 to December 31) ninety-five cases occurred among the unvaccinated group, forty-five of them between October 7 and November 21, and twenty-one between November 22 and December 31 Hence the morbidity rate among the 4,000 vaccinated during the period of eighty-five days was 28 per thousand The fact that no cases of yellow fever occurred among vaccinated persons after the lapse of two weeks following vaccination, while the epidemic had remained unabated in intensity, as shown by the incidence among the unvaccinated during the same period, seems to indicate a definite protective effect of vaccination (Chart 5)

In the small town of Tambogrande, in northern Peru, with 500 inhabitants, two isolated cases of yellow fever occurred Forty-seven persons in the neighborhood of the primary focus were subsequently vaccinated (Dr Valcarcel) Within two weeks after vaccination, eighteen new cases arose among the villagers, one of these persons had been vaccinated, but only ten days previous to the onset of disease

COMMENT

It is understood that vaccination constituted only a part of the campaign against yellow fever, and in all these localities it was carried out simultaneously with the antistegomyia campaign Just what part the vaccination played in checking the further spread of the disease is therefore not easily estimated, but one fact stands out, namely, that practically all persons vaccinated escaped yellow fever, notwithstanding the opportunities for infection to which both vaccinated and unvaccinated were alike exposed under otherwise identical conditions, as shown by the fact that during the period of ten days following vaccination before the protective effect of the vaccine could have developed, the number of victims of yellow fever among vaccinated and unvaccinated was equally great Vaccination, which protects the nonimmune person from infection, is a valuable weapon in itself, but it does not supplant the method of elimination of yellow fever by the antistegomyia campaign

SUMMARY

The transmission of yellow fever from man to guinea-pigs and the isolation of *Leptospira icteroides* have been repeatedly accomplished by various workers in the course of different epidemics, in Guayaquil by Noguchi (1918), in Merida and Peru by Noguchi and Kligler (1919-1920), in Piura by Gastiaburu (1919), in Vera Cruz by Perez-Grovas (1920) and by Le Blanc (1921)

Anti-icteroides serum reduces the mortality in yellow fever when used on or before the third day of the disease Of 170 cases, ninety-five have been treated on or before the third day, with thirteen deaths (13 6 per cent mortality), while the average death rate of untreated patients during these epidemics has been 56 4

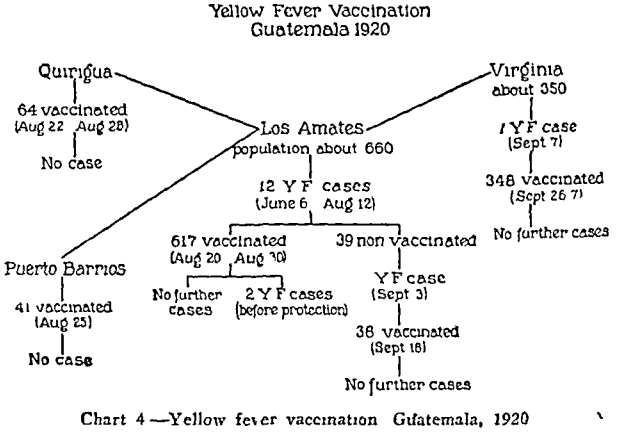

Chart 4.—Yellow fever vaccination Guatemala, 1920

per cent (442 deaths among 783 cases not treated with serum) On the other hand, treatment with serum after the fourth day has no appreciable effect, since there were thirty-nine deaths among seventy-five cases (52 per cent mortality)

Prophylactic inoculation by means of the injection of 2 c c of the killed culture of *Leptospira icteroides* (containing at least 2,000,000,000 organisms per cubic centimeter) is of definite protective value Among 3,230 persons vaccinated twice, no case of yellow fever developed, while 278 cases occurred among the non-vaccinated (Guatemala, Salvador, Tuxpan) notwithstanding the fact that both groups of individuals were equally exposed to infection Among 4,307 persons receiving only a single inoculation of the vaccine, only five suspicious cases (Salvador) developed

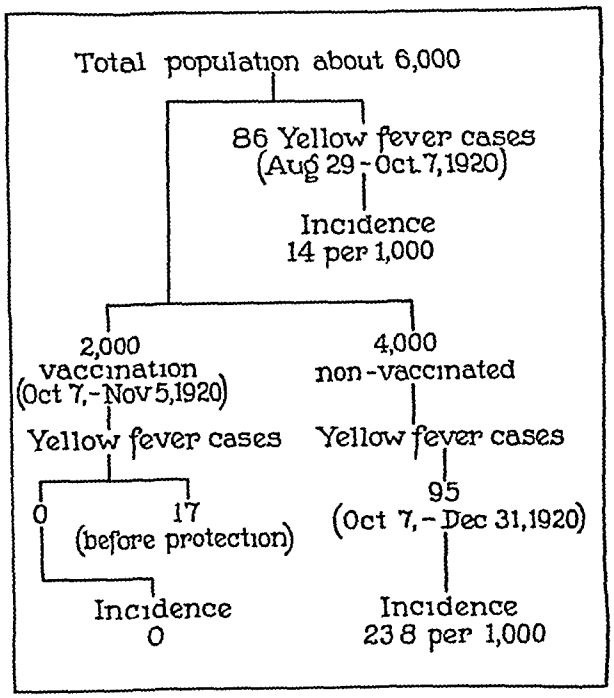

Chart 5 —Yellow fever vaccination, Tuxpan Mexico 1920

The protection resulting from vaccination does not become effective until about ten days after the last injection, as shown by the frequent case incidence occurring among the vaccinated population within from one to ten days after they were vaccinated There were twenty-three such cases among 7,537 persons who were vaccinated with the standard vaccine

NOTE —The records of vaccination and serum treatment presented here comprise the work of a number of observers For statistics from Central America I am indebted first to Dr Theodore C Lyster and Dr Wenceslao Pareja, and then to Dr Charles A. Bailey (Salvador) and Dr Emmett I Vaughn[12] (Guatemala), for the records of Mexican cases to Dr A B Vasconcelos[13] and Dr Graham Casasus of the Consejo Superior de Salubridad, and to Dr Diego Hernandez of the Junta de la Sanidad de Yucatan, also to Dr T J Blanc of the staff of the Rockefeller Institute, who has been working in Vera Cruz, the Tuxpan statistics were furnished by Dr W J Lynn and Dr Guadarrama, the work in Ecuador and Peru was done with the cooperation and assistance of the Ecuadorean and Peruvian health authorities

12 Dr Lyster and his associates are intending to present their own experiences in a paper to be prepared by them

13 Dr Vasconcelos's details regarding results in Mexico are soon to appear in print

SUBJECTIVE SIGNS IN DIAGNOSIS*

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This paper is designed to show that subjective sensations of patients have a validity not inferior to the facts which are denominated objective in contradistinction It is customary to deride what is called subjective, i e, what we learn by the revelations of the patient about himself even when elicited by examination By ignoring these data failure is courted, of which scores of examples could be adduced The reason of this derision of the subjective is largely a confusion on the part of the examiner between the actual subjective feelings of the patient and a very different phenomenon, viz, the interpretation the patient places on these feelings, which is very often extremely erroneous, as all of us know

But patients are not the only sinners in this respect, for the history of medicine is crammed with fallacious interpretations of objective signs, such as the appearance of a bacillus, the nature of a chemical reaction, the significance of a pathologic process Even today the fallacious interpretation of the Wassermann reaction still occasionally occurs It is only yesterday that there was an almost general refusal to think of tabes as syphilitic, although the objective pathologic appearance of the spinal roots were unequivocally so Even now, in many minds, a special validity is implicitly attributed to signs requiring laboratory procedures, as against signs ascertainable at the bedside without chemicals or registering apparatus

There is a tendency in our profession toward besetments In the main the inductive process is put to sleep Thus, when a medical man finds a microbe amid the facts, it grows and grows till it becomes the macrocosm of his consciousness In another man a chemical reaction is all dominant In a third, it is the registering apparatus which impedes his thinking To the three slaves of the objective must be added that acolyte of the psyche, who is allied to these objectivists through an acquired faculty of discerning abstruse psychologic reactions in his patients To paraphrase an ancient proverb, "He cannot see the wood because of the rabbits in it" He is no different from the first three physicians, for, although the signs he deals with are called subjective, yet to him they are just as much objective data as a reflex, a chemical reaction, a difference of percussion, etc And they are indeed objective the error not being one of clinical fact but one of the clinician's interpretation by besetment by one who is intoxicated by the exuberance of his own "psychosity"

In what are called the psychoneuroses, of course, it is in the subjective aspects that entire reliance has to be placed, for in these individuals there is to be found nothing but what the patient himself reveals However, nowadays, only the most reactionary dare deny the pragmatic power of the psychotherapist to bring well-being to the thousands of people who are sociologically inefficient and personally miserable

* Read before the Section on Nervous and Mental Diseases at the Seventy Second Annual Session of the American Medical Association Boston June 1921

* In medical nomenclature the sign is taken as a manifestation elicited by the examiner and of which the subject does not complain A symptom is looked on as that of which the patient is conscious and can complain and the word subjective is used in contrast to the word objective to mean that which while felt by a subject, cannot be directly verified by an examiner while objective is looked on as verifiable According to these definitions the title Subjective Signs is a contradiction in terms

because of sufferings entirely without the signs regarded as objective It is quite true that to this thesis there are still objectors who continue to present trite facts illustrating the principle that an undetected disturbance of the body may produce discommoding psychologic symptoms which may be regarded erroneously as psychogenic, which symptoms disappear as soon as the disorder of the body is rectified Such an instance was that of the psychasthenic forester whose growing inability to deal with his official subordinates might have been attributed to prolonged absence from his family and the anxieties contingent thereupon Having, however, an adequate acquaintance with psychasthenic characters, I did not fall into this error, but fell into another by attributing the state to the kind of physical inadequacy induced by the poor adaptation to the sedentary life in an office after being years in the field The real interpretation was revealed by the extraction of an inflamed tooth, after which immediate relief occurred Such instances might be multiplied indefinitely, and it is to facts of this nature that must be attributed the prevalance of the treatment of neurotic states by such empiric procedures as oophorectomy, turbinectomy, tenotomy or refractive corrections, suspension of the colon, manipulation of the spine or orthopedic adjustment, all of which are good in their right place, but very bad when applied empirically without an adequate diagnosis, the lack of which is so often due to the ignoring by the physician of subjective signs

FALLACY OF ATTRIBUTION TO ORGAN

In neurology proper, perhaps the most conspicuous example of the exceeding value of subjective signs is furnished by the sensation of numbness, more especially when this is intermittent and widespread These are the very qualities to which it has been the fashion to attribute fallaciousness and to regard as the products of imagination, hysteria In reality, these attributes indicate oscillation in the physical state, at the period when changes are so impalpable as to escape diagnosis by our present objective methods, a state which reveals itself solely by these subjective signs I refer to the incipiency of the changes in the spinal cord concomitant with the disorder known as pernicious anemia Many of these patients present for years numbness or tingling in the fingers or toes without any suspicion arising of blood changes, and possibly without the objective signs which we require in establishing disease of the spinal cord I have yet to see a case, however, in which these were absent when it came to examination, but I have never seen a case which has not had a long history of the subjective signs of which I speak, long anteceding my examination For example

A man, aged 61, referred by Dr Thompson Two years ago, numbness of thumb and toe after dancing, followed by girdle sensation and gradual numbing of hands a year and a half ago Progressive difficulty in walking Great weakness Examination reflexes feeble, Achilles and arms absent Left cremaster absent Left abdominal feeble Plantar flexion fair Pupils active. Prick felt Deep pain diminished in L quadriceps and R hamstrings and calf, and L radius Vibration absent below L 5, diminished in lumbar spine Spacing fair Finger to finger slow and inaccurate Speech thickened Diagnosis spinal sclerosis from pernicious anemia Blood count confirmed this Treatment has improved him

In another case numb feelings in the fingers had existed for over six months without any significance being attached to them But in this case even when difficulty in walking occurred no suspicions were aroused and a fantastical diagnosis of arterial constriction was supposed to account for the incapacity Examination quickly revealed the sclerosis of the spinal cord and led to a diagnosis of an idiopathic anemia In still another case even a young neurologist attributed to hysteria a patient's relation of paresthesiae characteristic of alterations of structure Examination quickly showed a sclerotic spinal cord [1]

Paresthesias at the roots of the limbs characterize lesions in the thalamic region They are frequent in encephalitis and have again been adjudged hysterical in cases without paralyses, especially if emotional disturbances are prominent This error is avoided by clinicians who do not ignore subjective signs

In some cases of arteriosclerosis, tingling and numbness occur also Never must they be adjudged as hysterical

SENSATIONS PROVOKED BY EXAMINER

In investigating these, too, the patient's own account has to be relied on, so that fundamentally this method is no less subjective For instance, the Tinel tingling sign can be relied on only in an honest subject It is an error to suppose that it is confined to nerve section I am at present observing its progress in a patient with sciatica of the external popliteal nerve incurred during pregnancy

An equally reliable sign to that of Tinel is another subjective difference of sensation experienced by the patient when the skin is stroked over an area the nerve supply of which may not seem otherwise impaired at all Patients themselves can map out areas in this way with great exactitude The sign is found in mild cases of meralgia paraesthetica or other forms of neurodocitis

Hyperalgesia is nowadays sufficiently esteemed as a sign as regards the skin, but local hyperalgesia of muscle, an equally valuable sign, receives inadequate recognition even by neurologists In a mild case of polyneuritis, diagnosis was recently missed and the patient permitted to visit an osteopath, even though preceding diphtheria should have aroused suspicion The earliest sign in this case was musculotendinous hyperalgesia

But muscular hyperalgesia is even more often important in disease of the viscera Every surgeon knows this of appendicitis and cholecystitis It is less known regarding pulmonary inflammations Difference in the tenderness of thoracic muscles corresponding to the spinal segment from which arises the sympathetic ramus going to inflamed areas is inadequately utilized by internists as a sign A segmental hemihyperalgesia of this kind is a very frequent phenomenon and it may affect the cutaneous segmental distribution as well as the muscular or articular nerve supply

These sensory signs referred from viscera are of a quite different character to the sensory symptoms caused in the course of emotional disturbances and sometimes objectivated by patients to the viscera in which they seem to be felt Nowadays it has come to be realized, particularly concerning the stomach and sometimes the heart, that the symptom the patient emphasizes is a consequence of an emotional reaction, of which it is really a part

It is very important to compel patients to give us a clear introspection of sensations of this kind They may be differentiated by the absence of the peripheral

1 Williams T A: The Causes of Emotivity and Their Management J A M A 75 523 (Aug 21) 1920

hyperalgesia which occurs from direct visceral irritation In these cases, of course, the problem is one of psycho-diagnosis and not of neurologic investigation In both cases, however, clinical power comes only from a due appreciation of the subjective signs, and this demands of the patient precise observation, which is not so rare as some clinicians believe, along with its clear expression, which tends much more often to be clouded by conventional fallacies of nomenclature gathered by report from the body of constantly shifting popular knowledge of hygiene and symptomatology The clinician who knows what he is about will easily direct the patient away from interpretations and set him upon recounting his observations as naively as possible

The enumeration of occasions for the use of subjective signs would extend beyond the limits of a short paper, but attention must be drawn to two more in particular because of the frequency with which they are ignored to the detriment of patients

I refer to the characters of recurrent headache, particularly as to situation and kind As to headache, it is not rare for patients who have suffered for years to fail to mention it at all to a doctor, so accustomed are they to regard it as a part of themselves or insusceptible of cure This fallacy depends on the prevalent medical doctrine that migraine is a hereditary fatality irremediable by medical art While the tendency is hereditary, the pathogen can be modified, the patients vastly relieved by attenuation of the severity of the headache and by great lengthening of the interval between attacks, which from weekly or almost daily ensue every few months or when infraction of prophylactic rules is indulged

As to pituitary headache, the subjective recital of its location is often the most important angle fact in its diagnosis

Of one other subjective sign, a word must be said—of vertigo This is too often regarded as trifling by physicians, and the patient is neglected in consequence Its importance was manifested in a recent striking case only because it reached the point of disorientation, so that the man was almost incapable of finding his way in the automobile The physician regarded it at first as a psychosis, but an examination quickly showed vestibular and oculomotor signs which indicate a lesion, which was then placed in the subthalamic region The pathogen syphilis was detected and the patient vastly improved by treatment, solely because the subjective sign which led to a diagnosis incommoded him so intensely

Countless are the cases of vertigo indicative of cerebral arteriosclerosis, neoplasm and syphilitic endarteritis when diagnosis is reached only after irreparable damage has occurred because adequate significance is not attached to the condition by clinicians who habitually fail to take account of subjective signs

Teaching Unit of Tuberculosis —A proper teaching unit should afford the fullest facilities for theoretical and practical instruction in all aspects of the tuberculosis problem And these facilities should be available not only for the student, but also for the practitioner of medicine To the latter they should be available in the form of short carefully planned, intensive postgraduate courses to which every inducement should be given for his attendance Now that the treatment of tuberculosis is so rapidly being taken over by the state it would be a sound and wise policy if these postgraduate courses were not only available free of all cost but also that the graduate student were boarded and lodged free of expense—H Gauvain, *Brit J Tuberc* **15** 3, 1921

THE SERIAL QUANTITATIVE METHOD OF CULTURE IN THE STUDY OF RESPIRATORY DISEASE *

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Of all the regions of the body, none offer more difficulties to bacteriologic study than do the upper air passages After more than thirty years of investigation the cause of the large and ever present group of infections included under the designation of colds, grip and influenza is still unknown, and even the significance of the various organisms found in association with these conditions is but little understood Yet this is not surprising when one considers the conditions existing in the upper air passages—a region of great anatomic complexity occupied by a profuse normal flora which is constantly modified by the entry and exit of extraneous organisms A more detailed analysis of the difficulties presented by respiratory bacteriology shows that they may be grouped under several heads

DIFFICULTIES

Technical —The initial collection of representatives of all varieties of organisms present in the upper air passages is by no means simple Even with the most careful swabbing many areas must be neglected and organisms lurking in tonsil crypts, crevices of the mucous membrane, in the sinuses and in the deeper nasal passages may be passed over The crudity of the swab method may be readily demonstrated by making cultures from the same individual at brief intervals, using a technic as nearly as possible constant and seeing the difference in the proportions of the bacteria obtained But even if all varieties of organisms present adhere to the swab in their true proportions distorted results may be obtained owing to the technicalities of mediums and of plating The usual plate culture from the throat shows a more or less confluent mass of growth from which the various kinds of bacteria are isolated with considerable difficulty Under the best of conditions slowly growing and delicate organisms may be largely or entirely overgrown by the more hardy flora, and bacteria present in only small numbers must often be overlooked This fact is readily illustrated by comparing the number of pneumococcus carriers demonstrable by culture and by the more delicate method of mouse inoculation

Interpretative —With the actual results of the culture before him, the examiner faces the problem of interpretation, which is by no means simple One must decide in the case of each organism whether it is a normal inhabitant, or whether it is being carried without having any special pathologic significance, or whether it bears a definite relation to present or recent disease

CRITICISMS OF METHODS IN GENERAL USE IN STUDYING RESPIRATORY DISEASE

Even a superficial examination of the literature on respiratory diseases makes it clear that various workers have obtained quite contrary results In the case of colds, for example, a wide variety of organisms [1]

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1 Bloomfield A L Variations in the Bacterial Flora of the Upper Air Passages During the Course of Common Colds Bull Johns Hopkins Hosp to be published

have been incriminated, such as *Micrococcus catarrhalis*, staphylococci, streptococci of various sorts, and influenza bacilli In attempting to explain these contradictions, the following points may be suggested (1) Differences in the manner of collecting material Here we find that the methods, while in the main similar, differ in detail Some workers have swabbed various areas in the upper air passages, others have used expectorated material or nasal washings (2) Differences in mediums Wide variations in results may follow the use of different mediums The remarkable discrepancies in the reported incidence of influenza bacilli in the throat are clearly due to this cause (3) Variations in technic of plating This is a point of special importance The usual method of rubbing or streaking the swab over the surface of the plate yields a confluent growth in which one or another organism may appear to predominate to the practical exclusion of others (4) The number of cultures made In most of the reported work, single cultures have been made Thus, one obtains at best only a cross-section view of conditions, without being able to say anything about the sequence of events (5) Special interest in one or another organism Most observers have been interested in the special relation of a particular organism to some disease condition This attitude has often led to unjustifiable etiologic assumptions, as will be shown below

THE SERIAL QUANTITATIVE METHOD

In considering the methods outlined above, two outstanding deficiencies are apparent first, the lack of data as to the relative numbers of organisms present, and, second, the fact that as a rule only single cultures are made It seems, for example, that the significance of a single colony of *Staphylococcus albus* recovered in one culture may be different from that of thousands of colonies of this organism recovered repeatedly from the same individual over a long period of time To see whether the problem could in any way be simplified, we have employed a serial quantitative method of culture in normal individuals and in cases of respiratory disease the results of which we wish to outline now

Methods—A cotton swab is passed systematically over the soft palate, both tonsils, and the posterior pharyngeal wall as high as one can reach This swab is then rubbed over the surface of the plate of medium With a bent glass rod the organisms are spread uniformly over the surface of the plate The same rod, with whatever bacteria adhere to it, is then rubbed over a second and a third plate In this way a discrete growth of colonies is obtained which allows accurate quantitative estimation of the number of organisms present, as well as easy fishing of colonies for further study In our work both rabbit-blood agar and oleate hemoglobin agar have been used These mediums are suitable for all of the usual organisms found in the throat—staphylococci, streptococci (both hemolytic and nonhemolytic), influenza bacilli, hemolytic influenza bacilli, diphtheroids, the gram-negative cocci, and others Cultures are taken at frequent intervals from the same individual during the course of the disease or during the period of study, and the results compared qualitatively and quantitatively

TABLE 1—PROTOCOL OF NORMAL PERSON (CASE 9 ER)*

Date of Culture	Nonhemolytic Streptococcus	Gram Negative Cocci	Hemolytic Streptococcus	Pneumococcus	Influenza Bacillus	Staphylococcus Albus	Meningococcus	
Mar 4	∞	∞	0	10				
Mar 9	∞	50	0	0	0	0	0	A gram positive diphtheroid many colonies
Mar 16	∞	∞	Alpha type many colonies	Type IV many colonies	0	0	0	A coarse gram positive coccus many colonies
Mar 25	∞	∞	Alpha type many colonies	0	100	0	0	
Apr 5	∞	∞	0	0	A few	0	0	
Apr 13	∞	∞	0	0	0	0	0	Several hundred colonies of a gram negative bacillus large gray colonies with hemolysis
Apr 16	50	Many	0	0	0	0	0	Many colonies of a coarse gram positive coccus not S albus
Apr 20	∞	∞	0	0	Many	3	0	50 colonies of same gram negative bacillus as found in culture of April 13
Apr 25	∞	∞	0	0	Many	0	0	

* The normal flora is present In addition influenza bacilli and other bacteria were transiently present A mild pharyngitis lasting two days preceded the appearance of the alpha hemolytic streptococcus recovered on March 16 and March 25

TABLE 2—PROTOCOL OF A CASE IN WHICH THERE WAS A SIMPLE RESPIRATORY INFECTION (CASE 1 SL)*

Date of Culture	Nonhemolytic Streptococcus	Gram Negative Cocci	B Influenzae	Hemolytic Streptococcus	Pneumococcus	Comment	Clinical Notes
Jan 4	∞ At least two varieties	∞	100 colonies (hemolytic)	0	0	Many colonies of a minute gram positive organism a few colonies of S albus	Cold began January 2 nose occluded throat raw tonsils removed nasal and pharyngeal mucous membranes reddened
Jan 7	∞	∞	Many colonies (hemolytic)	0	0		Convalescent
Jan 10	∞	∞	0	0	0	A few colonies of S albus	Well

* Clinically the case was one of an uncomplicated cold The members of the normal flora—nonhemolytic streptococcus and gram negative cocci—were present in large numbers in all the cultures Staphylococcus albus was present in small numbers in the first and third cultures In the first culture there were many colonies of a minute gram positive organism Hemolytic influenza bacilli were present in the first two cultures Our impression of the bacteriology of this case is that we are dealing with the normal flora plus transient insignificant organisms such as one finds in healthy controls

RESULTS

1 *Healthy (Normal) Individuals*—A series was studied[2] by this method to determine, if possible, the

2 Bloomfield A L The Significance of the Bacteria Found in the Throats of Healthy People Bull Johns Hopkins Hosp **22** 33 (Feb) 1921

normal constant flora of the throat It seemed that with this as a background the findings in disease could be much more readily interpreted It was found that the organisms recovered from the throats of healthy persons by this method fall into two groups (1) A true normal flora constantly present in all people over long periods of time consisting of the gram-negative cocci, and nonhemolytic streptococci To this perhaps may be added certain diphtheroids The exact status of the influenza bacillus and the pneumococcus is still in doubt, but these organisms cannot yet be regarded as members of the normal flora in the strict sense, although they are frequently harbored by healthy people (2) A transient flora consisting of both pathogenic and nonpathogenic bacteria which are present normally for only a short time in the same individual This group is discussed more at length below An illustrative protocol will serve to emphasize these points (Table 1) It will be seen that the subject constantly harbored gram-negative cocci and nonhemolytic streptococci Other organisms were present merely as transients Had only a single culutre been made, for example on March 16, much stress might have been placed on the hemolytic streptococcus recovered on that day, whereas the series of cultures brings out the true relation of this organism to the basic flora

2 *Respiratory Infections*—A series of cases of common colds was studied in a similar way [1] In simple, uncomplicated cases, as illustrated by Table 2, the findings were essentially those which are obtained in normal people It has been possible, therefore, reasonably to conclude that none of the ordinary pathogens which have been regarded as the cause of colds are really the primary cause, but that some other infectious agent must be sought This fact could not have been demonstrated without serial quantitative cultures On the other hand, in cases of colds featured by a clinical complication, such as bronchitis, or a sinus infection, it was often possible to show that a particular organism was the cause of the complication because of its coincident advent and disappearance (Table 3)

3 *Tonsillitis*—The method was then applied to cases of acute follicular tonsillitis (Tables 4, 5, 6 and 7) In this disease we have an entirely different picture featured by the presence of B hemolytic streptococci, which persist during the active stage of the disease and for a variable length of time thereafter In two cases, observations were obtained shortly before

TABLE 3—PROTOCOL IN A COLD COMPLICATED BY TRACHEITIS (CASE 8 BL)*

Date of Culture	Nonhemolytic Streptococcus	Gram Negative Cocci	B Influenzae	Hemolytic Streptococcus	Pneumococcus	Comment	Clinical Notes
Dec 21	∞	∞	0	0	0	Several hundred colonies of a coarse gram positive coccus 15 colonies of a yellow staphylococcus	Third day of cold nose stuffy throat raw malaise and chilliness for one day tracheitis with thick green purulent sputum
Dec 29	∞	∞	0	0	0	A few colonies of a coarse gram positive coccus 15 colonies of a yellow staphylococcus	Practically well throat still a little raw slight cough with mucoid sputum
Jan 8 Sputum culture	∞	∞	0	0	0	Many colonies of a yellow staphylococcus	Well still very slight throat catarrh
Dec 21	0	0	0	0	∞	Many colonies of a coarse gram positive coccus	

* Clinically the case is one of a cold complicated by a severe tracheitis The normal flora was constantly present Two organisms which are not normally present in the throat were obtained—a yellow staphylococcus and a coarse gram positive coccus From the sputum a pneumococcus was obtained in almost pure culture This organism was clearly associated with the tracheitis

TABLE 4—PROTOCOL IN A CASE OF ACUTE FOLLICULAR TONSILLITIS (CASE BA)*

Date of Culture	Nonhemolytic Streptococcus	Gram Negative Cocci	B Influenzae	Hemolytic Streptococcus	Pneumococcus	Clinical Notes
Jan 20	0	∞	0	∞ (B type)	0	Onset January 20 high fever sore huge red tonsils covered with exudate
Jan 21	Many	∞	0	∞ (B type)	0	Condition unchanged
Jan 24	∞	∞	Many colonies (hemolytic)	A few colonies (B type)	0	To normal tonsils still large and red but no exudate
Jan 29	Many	∞	Many colonies (hemolytic)	Many (B type)	0	Feels well tonsils still a little large but perfectly clean and pale
Feb 10	∞	∞	0	0	0	Well

* This case shows predominance of hemolytic streptococcus during active stage of disease with disappearance later and return of normal flora

TABLE 5—PROTOCOL IN A CASE OF ACUTE FOLLICULAR TONSILLITIS (CASE SP)*

Date of Culture	Nonhemolytic Streptococcus	Gram Negative Cocci	Hemolytic Streptococcus	B Influenzae	Pneumococcus	Clinical Notes
Jan 11	0	Many	∞ (B type)	0	0	Onset January 11 with sore throat and fever (to 101) on examination large swollen tonsils with exudate
Jan 13	0	20 colonies	∞ (B type)	0	0	Tonsils still large and red patches subsiding
Jan 15	0	Many colonies	∞ (B type)	0	0	Temperature normal throat clear
Jan 17	Many colonies	Many colonies	Many colonies (B type)	0	0	Well
Jan 19	A few	40 colonies	∞ (B type)			
Jan 25	∞	∞	Many colonies (B type)	0	0	
Feb 1	Many	∞	(B type)	A few colonies (hemolytic)	0	

* Same general findings as in previous case Flora at first practically replaced by hemolytic streptococcus gradually returning as streptococcus decreases Convalescent carrier state persisting during period of observation

the onset of the disease at a time when the hemolytic streptococci were not yet present Study of these cases by this method brings out, therefore, the important fact that the occurrence of B hemolytic streptococci when persistently present indicates present or past infection with this organism Proof of a chronic carrier state except under these conditions is still lacking A case of scarlet fever and one of influenza were also studied illustrating the relation of the streptococcus to the throat flora in those diseases

COMMENT

It is apparent from the foregoing observations that the significance of the presence of a given organism in the throat may vary under various conditions In the light of present knowledge, one or another of the following explanations may apply

A The organism may be a member of the constant normal throat flora

B The organism may be a member of the normal flora of some other part of the body (skin, intestine) which has been introduced into the throat

C The organism may be an extraneous one which has been introduced into the throat

D The organism may have become established in a local focus of disease in the upper air passages

E The organism may be one which is the cause of and is associated with the presence of an acute disease

A *The organism may be a member of the normal constant throat flora*

In previous papers evidence was brought to show that the free surfaces of the normal mucous membranes of the upper air passage usually afforded a very unfavorable environment for the colonization and growth of extraneous bacteria, as they were promptly washed away by the secretions [3] It appeared that a focus of diseased tissue usually was necessary for such organisms to breed in, and that from such a focus they were discharged over the free surfaces The question naturally arose as to whether there was a true normal mouth flora—namely, bacteria which live out their whole life history on the free mucous surfaces of the upper air passages, requiring no disease to aid them in colonizing Study of the flora of clinically normal throats, as pointed out above, showed that certain varieties of bacteria were constantly present in large numbers Working with aerobic methods, such organisms were found to belong to the groups of gram-negative cocci and nonhemolytic streptococci These organisms are present so uniformly and in such large numbers that, until evidence is brought to the contrary, we are inclined to believe that the free surfaces of the normal mucous membranes afford them a suitable habitat and that no focus of disease as an accessory factor is necessary in explanation of their presence Anaerobic or other special methods may reveal still other organisms to be members of the normal flora

B *The organism may be a member of the normal flora of some other part of the body (skin, intestine, etc) which has been introduced into the throat*

Extension of bacteriologic study to the various regions of the body has revealed, in each, certain

TABLE 6—PROTOCOL IN A CASE OF ACUTE FOLLICULAR TONSILLITIS (CASE WA)*

Date of Culture	Nonhemolytic Streptococcus	Gram Negative Cocci	Hemolytic Streptococcus	B Influenzae	Pneumococcus	Comment	Clinical Notes
Jan 11	A few	Many	∞ (B type)	A few colonies (hemolytic)	0		Onset January 9 with chill and fever (102) no sore throat until January 11 examined January 11 red throat large tonsils with exudate
Jan 13	A few	Many	∞ (B type)	30 colonies (hemolytic)	0		Tonsils still large and red patches subsiding
Jan 15	Many		∞ (B type)	A few colonies (hemolytic)	0		Throat clear no patches tonsils look normal
Jan 17	Many		A few colonies (B type)	0	0		Well
Jan 20	A few		A few colonies (B type)	0	0		Well
Jan 25	A few		A few colonies (B type)	0	0		
Feb 1	Many		20 colonies (B type)	0	0		
Feb 8			Many colonies (B type)	0	0	A few colonies of a small gram positive diphtheroid	

* The striking feature is the presence of an extraneous organism (B hemolytic streptococcus) associated with the tonsillitis During the active stage of the disease this organism practically replaced the normal flora The patient continued to carry it during the period of observation although in somewhat smaller numbers with coincident increase in normal flora

TABLE 7—PROTOCOL IN A CASE OF ACUTE FOLLICULAR TONSILLITIS (CASE F)*

Date of Culture	Nonhemolytic Streptococcus	Gram Negative Cocci	Hemolytic Streptococcus	B Influenzae	Pneumococcus	Comment	Clinical Notes
Mar 12	Many	∞	∞	A few (hemolytic)	0	A few colonies of a coarse gram positive diphtheroid	Just over a mild follicular tonsillitis today throat looks a little red and he complains of soreness
Mar 14	Many	∞	∞	2 colonies (hemolytic)	0	A few colonies of a gram positive diphtheroid	Well
Mar 16	Many	Many	∞	0	0	A few colonies of a gram positive diphtheroid 1 colony S aureus	
Mar 18	Many	∞	∞	0	0	1 colony S albus	
Mar 29	Many	Many	Several hundred colonies	0	0	6 colonies of a gram negative spore-bearing bacillus 6 colonies S albus	

* Culture made on March 4 showed no hemolytic streptococcus but innumerable hemolytic influenza bacilli With onset of tonsillitis the streptococcus became the dominating organism a carrier state persisting

[3] Bloomfield A L The Upper Air Passages as an Environment for Bacterial Growth Am Rev Tuberc 4 247 (June) 1920

organisms which are more or less constantly present The general nature of the intestinal flora is well known, and the presence of the white staphylococcus on the skin, and of diphtheroid bacilli in various parts of the body has been frequently demonstrated These organisms may at times be recovered in cultures made from the throat, but serial cultures (see above) made in the same individual show their presence not to be constant, as in the case of the true normal flora, but to be transient They may be present for from one to a few days but then usually disappear, perhaps to reappear later In general, they behave as do foreign organisms experimentally introduced into the upper air passages they disappear rapidly, as they do not colonize, but are promptly washed away by the mouth secretions We believe, therefore, that these organisms when present in the throat are there as transients introduced from time to time by means of contact with some other part of the body, but that they do not actually colonize Under certain disease conditions to be discussed below, these organisms may be present over longer periods of time

C *The organism may be an extraneous one which has been introduced into the throat*

Under the ordinary conditions of extensive contact which exist among groups of individuals, a variety of extraneous bacteria, both nonpathogenic and potentially pathogenic, are constantly entering the upper air passages At the same time the flora of healthy people, even when exposed to respiratory disease, remains surprisingly constant [2] Clearly the organisms introduced, even if pathogenic, are as a rule disposed of without colonizing or producing disease Were this not so, every one would soon harbor many types of germs, and the incidence of such diseases as pneumonia would be general unless the race as a whole became immune It seems on the basis of the experimental [4] work that the most important protective mechanism of the upper air passages is the flushing action of the secretions by which the majority of foreign organisms are disposed of Such organisms may therefore be recovered from the throat in health (Table 1), but serial cultures are necessary to distinguish a transient harboring of the germ from an actual carrier state

D *The organism may be one which has become established in some local focus of disease in the upper air passages*

This state of affairs obtains most commonly in the so-called carrier state in which an organism not a member of the normal flora may be harbored in the throat for long periods of time Differential cultures made with a view of determining the seat of growth of the bacteria have shown in many carriers of hemolytic streptococci, diphtheria bacilli, meningococci, Friedlander bacilli and other germs that the organisms were breeding in a local focus of diseased tissue, such as the tonsils, nasopharyngeal lymphoid tissue, or a paranasal sinus It was possible, furthermore, to prove in the case of Friedlander bacillus carriers [5] that the organisms failed to colonize on the free mucous surfaces of the upper air passages but were discharged solely from a local focus of infection in the tonsil In every isolated instance of a carrier of an extraneous organism, one should therefore think of this possibility as being very likely

E *The organism may be the cause of and associated with the presence of an acute disease*

TABLE 8—PROTOCOL IN A CASE OF SCARLET FEVER (CASE BU)*

Date of Culture	Nonhemolytic Streptococcus	Gram Negative Cocci	Hemolytic Streptococcus	B Influenzae	Pneumococcus	Comment	Clinical Notes
Jan 24	∞	∞	Many (B type)	0	0		Onset January 22 with sore throat fever etc typical scarlet fever rash on following day January 24 typical scarlet throat temperature 101
Jan 28	∞	∞	10 colonies (B type)	0	0		Temperature normal throat not sore but still a little red
Jan 31	Many	∞	Very many (B type)	0	0	A few colonies S albus a few colonies small gram positive diphtheroid	Desquamating throat clear
Feb 8	Many	Many	Very many (B type)	0	0	A few colonies small gram positive diphtheroid	Convalescent
Feb 15	Many	Many	Very many (B type)	0	0	A few colonies S albus	

* Bacteriologically, the changes are the same as in acute tonsillitis

TABLE 9—PROTOCOL IN A CASE OF INFLUENZA (CASE E)*

Date of Culture	Nonhemolytic Streptococcus	Gram Negative Cocci	Hemolytic Streptococcus	B Influenzae	Pneumococcus	Comment	Clinical Notes
Feb 6	Many	∞	Many	0	0		Onset February 5 typical symptoms of influenza throat diffusely red tonsils not swollen no exudate
Feb 7	∞	∞	Many	0	0		Feels very bad general aching fever throat diffusely red
Feb 9	∞	Many	A few colonies	0	0	A few colonies of a huge gram positive coccus	Convalescent throat still raw and red
Feb 18	∞	∞	A very few colonies	0	0	A few colonies of a gram positive diphtheroid	Well
Mar 21	∞	∞	0	0	0	2 colonies S albus a few colonies of a gram positive diphtheroid	Well
Mar 31	∞	Many	A few colonies	A few colonies (hemolytic)	0	∞ colonies S aureus	Well

* About twenty cultures made previously in this individual failed to show hemolytic streptococci It seems certain therefore that the presence of this organism followed the present acute infection After seven weeks the subject still carries hemolytic streptococci in small numbers

4 Bloomfield A L The Fate of Bacteria Introduced into the Upper Air Passages Bull Johns Hopkins Hosp **31** 14 (Jan) 1921

5 Bloomfield A L The Mechanism of the Bacillus Carrier State Am Rev Tuberc **4** 847 (Jan) 1921

In acute diseases whose portal of entry is through the upper air passages, the causal organism may be found during the course of the disease in cultures made from the throat Pneumonia, typhoid fever, tonsillitis, meningitis and diphtheria may be mentioned as outstanding examples In these cases the extraneous organism is superimposed on the normal flora

CONCLUSION

My purpose in this paper is to show, by quoting the work thus far done, the futility of single qualitative cultures in respiratory disease, and to emphasize the importance of the serial quantitative method Extensive use of this method may eventually make clear the relation of the bacteria found in the throat to acute and to chronic disease, it may aid in solving the question of primary and secondary invaders, and it may give leads to rational vaccine therapy by enabling one to pick out the offending organism with greater accuracy

EXPERIMENTAL MEASLES*

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It is a well recognized fact that measles, especially in children under 5 years of age, is one of the most serious of the acute infectious diseases because of the severe and not infrequently fatal complications to which it leads The failure to prevent the spread of measles by quarantine and the inadequate control of its complications by isolation and symptomatic treatment have suggested that a more hopeful solution of the problem might be found in prevention by prophylactic inoculation This is of course by no means a new idea It was attempted as long ago as 1758 by Home[1] and as recently as 1913 by Herrman,[2] who attempted to immunize infants between 4 and 5 months of age when they were relatively immune, apparently with some success

Since it seemed probable that a more satisfactory basis for the ultimate development of a practical method of prophylactic inoculation could be obtained by animal experimentation than by other methods, a study of experimental measles in monkeys was undertaken The conflicting result reported by previous workers in this field made it necessary at the outset to establish beyond doubt the susceptibility of the monkey to the virus of measles Our preliminary experiments, therefore, were undertaken with this immediate end in view, and they have served mainly to confirm the original contention of Anderson and Goldberger[3] that the monkey is susceptible to measles The results of these experiments have been published[4] recently In brief, it has been shown that monkeys (*Macacus rhesus*) injected intratracheally with unfiltered or filtered (Berkefeld N) nasopharyngeal secretions from cases of measles in the prodromal or early eruptive stage of the disease react after an incubation period of from six to ten days with a group of symptoms closely resembling those of measles in man, namely, drowsiness, conjunctivitis, photophobia, Koplik spots, enanthem, exanthem, leukopenia and frequently fever The lesions in the monkey have been shown to be essentially identical with the corresponding lesions of human measles as described by Mallory and Medlar[5] Briefly, they consist of a proliferative and exudative reaction about the capillaries in the upper layers of the corium The exudate consists of serum and large mononuclear phagocytes or endothelial leukocytes These cells appear to be derived from the swollen and proliferating capillary endothelium, and are in a state of active multiplication as indicated by numerous mitotic figures The exudate invades the epithelium of the hair sheaths and epidermis, where it forms minute vesicles or vesicopustules The vesicles in the epidermis rapidly dry up and give rise to minute, thickened plaques which desquamate as scales The lesions of the buccal mucosa are similar in character, except that the epithelial lesions (Koplik spots) go on to maceration and shallow surface erosion instead of drying up to form scales

The disease has been transmitted readily from monkey to monkey through a considerable number of generations by suspensions of skin and buccal mucosa prepared from monkeys killed shortly after the appearance of the exanthem, by nasopharyngeal washings collected during the prodromal period, by citrated whole blood, defibrinated whole blood and by serum injected intravenously, subcutaneously or intratracheally, and by intimate contact infection Finally, it has been shown that one attack of experimental measles confers an active immunity against reinfection

With these facts established, our efforts have been turned toward an attempt to develop a method of prophylactic inoculation against the experimental disease In order to vaccinate successfully against measles, it seems probable that a living virus will have to be employed, as in the case of smallpox If so, this presumably will require modification of the virus of measles so that it will produce on inoculation only a local and not a general infection Modification or attenuation of a virus may theoretically be accomplished by animal passage or by subjection of a potent "fixed" virus to deleterious influences of chemical or other nature

A preliminary experiment having shown that the blood of an infected monkey was infective for other monkeys from the last day of the incubation period to the second day of the exanthem, it was thought possible that by repeated transfer of the infection with large amounts of blood collected during this period, the virulence of the measles virus for the monkey might be enchanced until a potent "fixed" virus was obtained The outcome of two such series of passages, however, was quite the reverse, and repeated transfer resulted in attenuation of the virus so that after from eight to twelve passages it was no longer capable of inducing the experimental disease In the first series of passages, two or three successive bleedings of from 6 to 10 c c each, collected on the second, third, and fourth days of the disease in the donor monkey were employed Beginning with the fifth passage, the experimental disease began to decrease in severity until the thirteenth

* From the Hospital of the Rockefeller Institute for Medical Research
* Read before the Section on Diseases of Children at the Seventy Second Annual Session of the American Medical Association Boston June 1921

1 *Home F Medical Facts and Experiments* Edinburgh 1759
2 Herrman C Arch Pediat **32** 503 1915
3 Anderson J F and Goldberger J Pub Health Rep **26** 847 887 1911
4 Blake F G and Trask J D Jr J Exper Med **33** 385 413 621 1921
5 Mallory, F B and Medlar E M J M Res **41** 327 (March) 1920

passage, when further passage failed In the second series of passages a single bleeding of 10 c c collected on the first or second day of measles in the donor monkey was used with a similar result, the ninth passage failing in this series Passage of measles from monkey to monkey by contact infection, while successful in early passages, has also failed as yet to provide a method for continuously propagating the disease in monkeys The reasons for this gradual diminution in the infectivity of the measles virus for monkeys are obscure, and it will require much further experimentation to elucidate them

Since these experiments, however, provided us temporarily with an attenuated virus, it seemed desirable to determine whether intracutaneous injection of small amounts of this virus might not result in a local reaction without evidence of a general infection In preliminary experiments, which are not as yet sufficiently complete to warrant any definite conclusions, it has been found that a virus attenuated by animal passage, if injected intracutaneously in small amount, will produce a local reaction without evidence of a subsequent general infection The local reaction is characterized by a cutaneous edema of from twenty-four to forty-eight hours' duration, which is followed in some cases by a local exanthem limited to the skin adjacent to the site of inoculation If the area of skin showing the reaction is excised, minced and ground in salt solution, and the resulting suspension injected intracutaneously in another monkey, a similar local reaction may occur It has also been found that similar results may be obtained by the intracutaneous injection of an originally potent virus which has been attenuated by preservation in glycerol in the icebox, Whether monkeys so inoculated will consistently develop an active immunity against infection is as yet uncertain That they may, in certain instances, possess an effective immunity against infection with a potent virus is indicated by experiments now in progress, but not yet sufficiently complete to be reported in full

ABSTRACT OF DISCUSSION

DR. JOHN F ANDERSON, New Brunswick, N J It is an interesting coincidence that Dr Blake should present his paper on experimental measles before the same organization just nine years after Dr Goldberger and I presented a summary of our work on the same subject A critical reading of the seven papers by Dr Goldberger and myself, and the three papers by Drs Blake and Trask will show that our earlier work has been repeated and confirmed in every essential point by their later work, although as yet Drs Blake and Trask have not reported on some phases of the subject covered by us, among which may be mentioned the period of infectiousness of the nose and throat washings, noninfectiousness of the scales, and resistance of the virus to various physical and chemical agents, nor have they reported infection by contact of young monkeys when placed in cages with monkeys sick with measles It is of interest that Drs Blake and Trask stated that the evidence we had presented of the production of measles in the monkey was not entirely conclusive owing possibly, to the fact, as stated by them, that we had not reported Koplik spots (though Lucas and Prizer did), blood counts and histologic studies of the skin, although it is safe to advance the opinion that but few physicians require such aids in the diagnosis of measles in the human being before measles is pronounced

DR CHARLES HERRMAN, New York There is no doubt that Dr Blake has added new evidence to this subject, although Drs Anderson, Goldberger, Hektoen and others have already proved conclusively that the discharges from the nose and throat and the blood of patients with measles were infectious, and that the disease could be produced experimentally in human beings and in monkeys Dr Blake's investigations are still more conclusive and have put the subject on a still firmer basis Many years ago I became convinced that with our present methods the spread of measles could not be controlled, and that such a control was possible only by means of immunization against the disease applied in early infancy In 1913, I began the inoculation of infants, immunizing them against measles The method was based on the following facts 1 It is definitely known that the discharges from the nose and throat, the mucus, in the active stage of the disease, that is, just before and while the eruption is beginning to appear, contains the virus of measles it is not necessary to know what that virus is or how to identify it under the microscope 2 In large cities, where practically all mothers have had measles, a relative immunity is conferred to the offspring through the placental circulation This immunity is absolute during the first two months and gradually disappears In infants inoculated between 4 and 5 months of age, the relative and temporary immunity might be converted into an immunity which would last for at least a few years 3 The infectious material is usually conveyed from the nasal mucous membrane of the patient to the nasal membrane of the individual infected So that would be the way in which artificial infection could take place With these facts in mind, the nasal mucus of children with measles who were otherwise free from disease, at the beginning of the stage of invasion when the eruption was beginning to appear, was collected on small swabs or drawn into small capillary tubes, which were sealed This mucus was applied by touching the nasal mucous membrane of healthy infants between 4 and 5 months of age One hundred and fifty infants have been thus inoculated, of these twenty-five are definitely known to have come in intimate contact with patients with measles, and only two have contracted the disease

DR HENRY F HELMHOLZ, Rochester, Minn Digkovitz, reporting from Pfaundler's clinic in Munich, showed that 173 individuals who had been exposed to measles and had been injected with 5 c c of the serum of convalescent patients, taken between the seventh and the fourteenth day after the temperature dropped to normal, had had absolute protection against the disease We were able to repeat these experiments in ten instances where the child stayed right in the home with the infected individual, and the child was protected against measles I think this is of great importance, and certainly during epidemics makes available a means of protecting children during the dangerous period from 1 to 4 in which the mortality is so exceedingly high

DR DENNETT L RICHARDSON, Providence R I About four or five weeks ago Dr O'Connor and I inoculated seventy-five children with serum from convalescent measles patients The inoculated children have been more or less definitely exposed to measles, and in no case has any child developed measles

DR. FRANCIS G BLAKE, New York We have not made a detailed study of the period of infectivity of which Dr Anderson spoke but we have confirmed his observations that, in monkeys, inoculations with secretions collected during the prodromal period of the disease have always been infective When the secretions were collected on the first day of the exanthem, transmission has usually been successful, but failures have occurred when the secretions were collected later in the disease The reason for going into the susceptibility of the monkey to measles was not that we had any doubt that Anderson and Goldberger had been successful in showing that the monkey was susceptible to the disease but in order to clear away doubts that had arisen from the negative results reported by Sellards and other workers The principal thing that we felt to be lacking in the final demonstration was the pathology, and, as Dr Anderson said, the pathology of measles at the time he did his experiments was not sufficiently well described I have followed with a great deal of interest the literature with regard to passive immunity No doubt, the method offers a good procedure in epidemics and one cannot help but think that something might have been accomplished in the army if that procedure had been applied

PREPANCREATIC AND PERIPANCREATIC DISEASE

WITH A CONSIDERATION OF THE ANATOMIC BASIS OF INFECTION FROM THE GALLBLADDER TO THE PANCREAS *

JOHN B DEAVER, M D
AND
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I PREPANCREATIC AND PERIPANCREATIC DISEASE

By JOHN B DEAVER, M D

In the majority of diseases of the upper abdomen, the symptoms are sufficiently well defined to permit of a rather close approach to diagnosis in a large number of instances Probably the most prominent exception in this respect is the pancreas At the same time this organ is so often involved in pathologic conditions of the viscera surrounding it and even in disease of more remote regions, and direct attack on the pancreas is as yet fraught with so much danger, that a proper consideration of prepancreatic and peripancreatic disease as forerunners of acute or of chronic pancreatitis becomes of vital importance For, in these days, when preventive medicine occupies so conspicuous a place in the medical forum, it behooves the surgeon also to concentrate attention on conditions which make for preventive surgery It is for this reason that I am willing once more to express my views on this subject

The most frequent forerunner of disease of the pancreas is some affection of the gallbladder or the bile passages, which is frequently, but not always, associated with calculi Extension of such an inflammation mainly by way of the lymphatics gives rise to lymphadenitis along the course of the common duct and its lymphatics in the right free border of the gastrohepatic omentum, and to a peripancreatic lymphangitis and lymphadenitis with enlargement and hardening of the adjacent portion of the pancreas itself Not alone from the gallbladder and the bile passages, however, does the pancreas become involved, but very often such involvement forms part of the pathology of gastric and duodenal ulcer Although the pancreas itself is resistant to the action of the gastric juice, it may form part of the base of a gastric ulcer, and its lobules can frequently be seen lying free in the base of the ulcer, although the inflammatory process is most liable to produce thickening of the interstitial tissues and hardening of the surface of the organ The possibility of perforation of such an ulcer, with the danger of acute pancreatitis added to the already threatening condition, must be kept in mind The serious effect on the pancreas of chronic ulcer of the duodenum is a familiar story to those who have occasion to treat a considerable number of these ulcers A recent experience at the Lankenau Hospital forcibly demonstrated this possibility with all its inherent serious consequences

REPORT OF CASES

The patient came to operation with a typical ulcer history, extending over a period of two years At operation, the ulcer, with much induration, was found on the second portion of the duodenum, with inflammatory adhesions between the duodenum and the pancreas The adhesions were separated, and amputated below the site of induration, and with the pylorus excised the head of the pancreas was sewed over the duodenal stump

The postoperative course was very stormy Evidence of secondary collection developed, and a second operation, performed on the fifteenth day, revealed acute hemorrhage pancreatitis with fat necrosis studding the pancreas and the omentum, also plastic exudate and pus under the liver Free drainage was instituted The condition failed to improve and a third intervention was undertaken five days after the second The incision was made into the left loin space from which pus and particles of pancreatic tissue exuded After washing out the cavity, drainage tubes were introduced There was no connection between the cavity and the original opening The patient did well after this, and two weeks later was discharged to the care of her physician, with the wound not entirely healed

This patient, unfortunately, died three months later of symptoms of an intercurrent pulmonary tuberculosis Her physician reported to the follow-up clinic, that the wound had healed well and that there was no evidence of a return of gastric symptoms

The basis of this stormy postoperative course was without doubt the duodenal ulcer, the contributing cause being the adhesions that had formed between the duodenum and the pancreas, and possibly also trauma to the pancreas at operation One such occurrence is all that is needed to point the lesson of early attention to symptoms of upper abdominal disease, especially those, which, like cholecystitis and ulcer, are marked by chronicity more or less prolonged

The appendix also may be a feature in peripancreatic and pancreatic inflammation through the retroperitoneal path This avenue of infection is illustrated in at least two cases, previously reported

One was a girl who came to operation with symptoms of acute gangrenous appendicitis accompanied by chills and fever The appendix was removed, but the chills and fever persisted and acute abdominal symptoms developed necessitating a second operation At the latter, a small abscess was found completely encapsulated in the mesentery of the ileum The pancreatic lymph glands were enlarged and the pancreas itself greatly swollen and edematous Death occurred ten days after the second operation At necropsy no other lesion was found except the pancreatic lymphangitis above referred to

The second case was also one of acute appendicitis with chills and fever The appendix was removed, a few adhesions were found, but there was no pus Seventeen days after operation, the patient developed signs of secondary collection and at reoperation a large mesenteric abscess was drained Death occurred five months later Necropsy revealed multiple abscesses of the liver, chronic periappendicular peritonitis, acute congestion of the spleen and kidneys, suppurative cholecystitis, and abscess at the head of the pancreas

The anatomic basis for this theory of the lymphatic route of infection is set forth by my co-worker, Dr J E Sweet, professor of research in surgery at the University of Pennsylvania

II THE PASSAGE OF INFECTION FROM THE GALLBLADDER TO THE PANCREAS

By J E SWEET, M D

The problem of pancreatitis is the old problem of abdominal surgery Where does the provocative agent come from? It would not make much difference about the theory if we could only agree on the correct procedure in practice The final test of all theory is the

* Read before the Section on Surgery General and Abdominal, at the Seventy Second Annual Session of the American Medical Association Boston June 1921

facts of practice, and if these facts do not conform to the theory, we will simply have to alter the theory, we cannot change the facts

In order to understand the problem, it is necessary to assemble all the information we have, and to weigh the interrelations of these facts, to start at the very beginning, with the embryology of the organ

Fig 1.—The development of the pancreas

The pancreas arises, as do all the organs of the gastrointestinal tract, as an out-pouching, or out-budding, from the wall of the primitive gut, like a glove finger pushing out from the inside of the wall The hollow of this bud or finger, forms the final duct, the cells at the end grow and develop into the secreting cells, the acini of the gland

The pancreas anlage appears later than the liver anlage, the common duct has already developed Three different buds,[1] apparently, go to form the pancreas, one dorsal bud from the wall of the gut nearer the stomach, from which the greater part of the pancreas, the body and tail, develops Two ventral buds arise in close proximity to the common duct, sometimes growing out from the wall of the duct itself Of these two ventral buds, one seems to disappear, perhaps forming the source of the aberrant glands often found along the gut wall (Fig 1)

The close relationship between this portion of the pancreas and the common duct is thereby explained Depending on the eccentricities of development, the relationship will vary somewhat, the common duct may be entirely surrounded by pancreatic tissue, pancreatic tissue may occur in the wall of the common duct itself

This relation of the exact point of origin of the persisting ventral bud to the common duct determines the final relation of the main pancreatic duct to the common duct If the pancreas anlage has grown out from the wall of the common duct itself, the finished pancreatic duct will open into the ampulla of the common duct, if the pancreas anlage has grown out from the wall of the gut itself, in close proximity to the common duct, the openings of the ducts will be in close proximity, yet the pancreatic duct may really open into the intestine and not into the ampulla at all

This development of the ducts must be clearly borne in mind, for from it there arises a peculiar arrangement of affairs which must be considered Yet it is not considered, either by the adherents of the theory of duct-borne infection, or by the surgeon who seeks to drain the pancreas through the gallbladder

The facts seem to be these Both buds develop by growth in continuity, the dorsal bud giving origin to by far the greater part of the gland, namely, all of the gland except that portion of the head in close proximity to the common duct and the intestinal wall The persisting ventral bud grows out but a little way, then fuses with the tissue developing from the dorsal bud, giving origin to but a small part of the glandular tissue In the majority of cases, the duct system of this anlage becomes the more important duct system from the point of fusion of the two anlages to the wall of the gut

This somewhat complicated developmental history results in the possibility of great variations in the final arrangement of things The relation of the common duct and the pancreatic duct to each other and to the intestine will vary, according to the relation of the original ventral anlage to the common duct and to the intestinal wall Four types of papillae of Vater are consequently described[2] (Fig 2) It is evident that an infection coming down the common duct could gain entrance to the pancreas in the first type, possibly in the third, certainly not in the second and fourth A small stone could block the opening, allowing bile to be forced into the pancreas, as in Opie's classical case, in Type 1, perhaps in Type 3, certainly not in Types 2 and 4 Increased pressure in the biliary apparatus would tend to close Type 3, and would make no difference in Types 2 and 4 It is doubtful whether the type pictured as Type 1 occurs very often, the usual picture, when the duct of Wirsung opens into the side of the common duct, is that of a fold of mucous membrane covering the opening, somewhat like the manner in which the ureters open into the urinary bladder

But I would respectfully suggest that the determination of the finer anatomy of the papilla is a matter to be decided by the pathologist at the necropsy table, rather than by the surgeon at the operating table

This complicated manner in which the duct system of the pancreas develops toward the final form results in further situations which must be borne in mind by the operating surgeon In a study of 100 subjects, Opie[3] found two ducts in every instance, but occasionally one or the other was so small that it was found with difficulty In ten of the 100 cases, the two ducts failed to anastomose with the gland, and in four additional cases, the two ducts were united

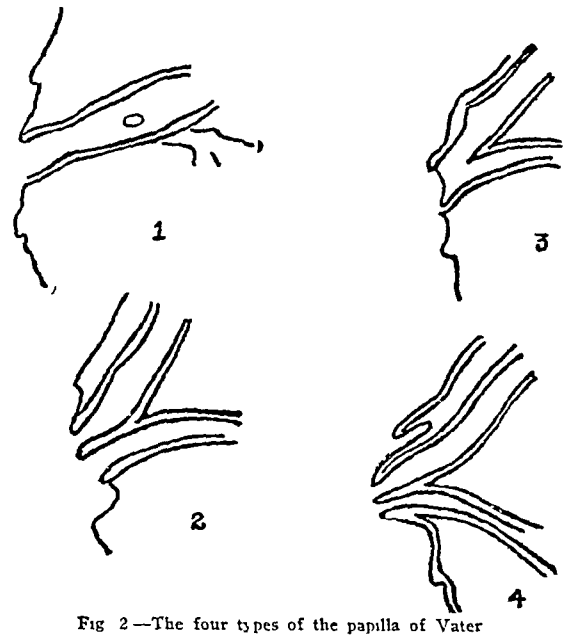

Fig 2.—The four types of the papilla of Vater

1 Hamburger Anat Anz 7 707 1892

2 Letuelle and Nattan Larrier Bull Soc anat de Paris 1899 p 987

3 Opie Am Med 5 966 1903

by such a minute twig that they might be regarded as independent of each other In fourteen per cent of the cases, then, the transfer of infection from the common duct to the entire pancreas is out of the question

In twenty instances, the duodenal end of the duct of Santorini was not patent, and in a considerable number of specimens, the orifice of the duct of Santorini, though patent, was so minute that its functional significance was slight In these cases, then, the entire gland could have been involved from the common duct, provided the type of papilla would have permitted Unfortunately, Opie did not include a description of the finer anatomy of the papilla of Vater

In eleven of the 100 cases the duct of Santorini was equal in size to, or greater than, the duct of Wirsung, so that during life it was doubtless the outlet for a considerable, if not the larger, part of the pancreatic juice

Of the 100 cases, then, ten showed no union of the ducts, four a very minute union, and eleven showed a duct of Santorini of equal importance with the duct of Wirsung Twenty-five per cent of the cases could not be infected throughout the entire gland from the gallbladder, and in twenty-five per cent of the cases, conversely, the pancreas could not possibly be drained through the gallbladder

Now the condition of chronic pancreatitis is most frequently limited to the "triangle of pancreatic involvement"—the tissue arising from the ventral anlage But let us not be too hasty in claiming that the arrangement of the ducts explains this, and proves the theory of duct-borne infection, for the manner of development of the pancreas will also determine the distribution of another structure of the organ, namely, the lymphatics

It does not seem to be settled whether the lymph system starts centrally, as outbuddings of the veins, and grows into the periphery, or whether the tissue spaces simply fuse together, thus forming the lymph channels In either event, the lymphatic system follows the lines of embryonic development The lymphatics of the gallbladder connect with the lymphatics of the common duct, and these in turn with the lymphatics of that area of the bowel wall from which the liver anlage arose The lymphatics of that part of the pancreas which arose from the neighborhood of the bile duct will also be intimately connected with the lymphatics of the lower end of the bile duct And all will drain into the same regional lymphnodes

The development of the duct system of the pancreas offers no explanation of the frequent limitation of chronic pancreatitis to the "triangle of pancreatic involvement," unless it can be shown that chronic pancreatitis is limited to that group of persons whose duct systems are so arranged that there is little or no anastomosis between the ducts of the two portions of the gland, and in whom, also, the papilla of Vater makes possible such a transfer of infection from the common duct to pancreatic duct If the laws of inheritance and of survival of the fittest hold true of the pancreas, it would seem that such unfortunate individuals would have dropped out of the running, ages ago!

ROUTES OF INFECTION

But the development of the lymphatic apparatus does afford an explanation, for the embryology determines the course and the interrelations of the lymph system, and therefore explains the tendency of chronic pancreatitis to limit itself to the duodenal portion of the gland. For this route, only infection is necessary, an individual would not need to have been cursed by ancestors, careless of the relations of their ducts

A consideration of the embryology leads to another conclusion The ducts and acini are directly related, the cells at the end of the outgrowing bud form the secreting cells, naturally, too, the secreting cells must be in intimate relationship to the ducts, since the product of these cells is poured into the ducts Infected bile forced up the ducts would, therefore, first, involve the secreting cells, causing an acute involvement of the acini These destroyed acini may be replaced by connective tissue giving the picture of sclerosis But chronic pancreatitis does not usually show signs of primary destruction of the secreting cells, nor does the clinical history point to any such acute condition, and if this is the route followed, infectious organisms are certainly brought to the pancreas What becomes of them?

Archibald [4] argues that the lymph route cannot be at fault because the pancreas is rarely the seat of bacterial inflammation But we will show in a moment that the lymphogenic theory is the only one that can explain the absence of organisms According to the duct theory, organisms must be in the infected bile, the adherents of this theory fail to explain what has become of them

How shall the problem be solved? To our minds, the final solution will depend upon a careful study of necropsy material, with a very careful study of the ducts If pancreatitis can be shown to occur under circumstances in which the anatomy makes a so-called ascending infection impossible, then we will have to admit another route, if these findings show that a majority of cases occur under circumstances wherein the ducts could have carried the infection, then the duct may stand accused, provided, however, that it is shown that those cases limited to the "triangle of pancreatic involvement" are thus limited because the duct systems fail to anastomose within the gland, and provided further that some one will explain what becomes of the bacteria in those cases in which the bile is certainly infected

Animal experimentation has led to an impasse The latest experiments by Archibald seem to him to show the passage of infection along the ducts, yet any one could interpret the same experiments as proving the lymphatic course as well, for in every one of his experiments he found an enlarged, congested lymph gland at the head of the pancreas He states that "these glands are found acutely swollen, obviously as the *result* of the pancreatic lesion," even while he reports in Cat 89, "two large, swollen lymph glands, obviously inflamed microscopic sections showed nothing abnormal in the pancreas"

Archibald is inclined to discredit the lymphogenic route because it would be a retrograde process, and because suppurative processes are not characteristic of pancreatic involvement Yet he fails to consider that an infection of the regional lymph nodes might well cause a simple damming back of lymph, with aseptic swelling of the interstitial tissue, later organization and increased interstitial tissue, which is precisely the picture of chronic pancreatitis, and which explains why infectious organisms are not found

4 Archibald Surg Gynec & Obst 28 529 (June) 1919

Archibald explains the effectiveness of cholecystectomy by hazarding the guess that the operation removes the only muscular force of any strength in the biliary system But, unfortunately, the operation of cholecystectomy is followed by a general dilatation of the ducts, which must mean that there has been an increase of pressure, therefore, if cholecystectomy is of value, it must be because Archibald is wrong If he is correct, the removal of the gallbladder should accentuate the pancreatitis, because the pressure in the biliary system is increased Unfortunately for his theory, such is not the case

If the papillae of Vater were always so arranged that infection could enter the pancreas from the bile passages, which they are not, if the ducts were always so arranged that infection could involve the pancreas through the duct of Wirsung, which they are not, if cases of chronic pancreatitis showed clinical symptoms which might be ascribed to transitory attacks of limited acute pancreatitis, with later transformation of the degenerated acini into sclerosed areas, which they do not, if cholecystostomy, with prolonged drainage, could always drain the pancreas, which it cannot, if cholecystostomy, with prolonged drainage, ever did more than might be ascribed to the drainage of the gallbladder, which it does not, if cholecystectomy which causes dilatation of the biliary passages, this dilatation showing increased pressure, aggravated the condition supposed to have been caused by increased pressure due to the spasm of the muscle of Oddi, which it does not, then we might be led to tinker with the papilla of Vater But I propose, in view of these facts, to continue to think of chronic pancreatitis as a lymphangitis, secondary to a focus of infection in the wall of the gallbladder, and as surgeons have always done and always will do, I shall continue to remove the focus of infection and cure the condition

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RELATION OF THE LIVER AND THE PANCREAS TO INFECTION OF THE GALLBLADDER*

EDWARD STARR JUDD, M D
ROCHESTER MINN

Cholecystitis is nearly always associated with a certain grade of hepatitis or pancreatitis or both The degree of inflammation in the liver and in the pancreas is often so slight that it is recognized with difficulty Cholecystitis does not always mean that the infection in the liver and pancreas will also be severe In certain cases, the disease seems farther advanced in the liver or pancreas than in the gallbladder, suggesting that it was primary in the liver or pancreas and secondary in the gallbladder It is possible that infection may progress in this manner, nevertheless, all the evidence indicates that the infection is primary in the gallbladder Graham [1] has recently called attention to the intimate association between the gallbladder and the liver through the lymphatics, and has suggested that in certain cases the gallbladder may be infected through the lymphatics from the liver A study of these lymphatics was made by Sudler [2] some years ago, but their importance in relation to cholecystitis and hepatitis has not been realized until recently

The gallbladder, as a part of the excretory mechanism of the liver, is brought into relationship with the liver through the bile ducts Thus it is possible although not likely, for infection in the hepatic tissues to reach the gallbladder by way of the bile stream Infection might pass through one viscus to the other through the venous system

The gallbladder and the pancreas are also associated through the lymphatics and the bile ducts It has been shown that the efferent lymphatics from the gallbladder and those from the pancreas anastomose around the head of the pancreas, and it has been further suggested that this is the reason why this part of the gland is most often invaded (Maugeret [3]) Deaver [3] believes that chronic pancreatitis in the majority of cases is due to the invasion of the substance of the gland by way of the lymph channel He calls this condition pancreatic lymphangitis and says that it precedes interstitial pancreatitis He believes that the source of this infection is the infected bile and the diseased gallbladder, and in a few cases, gastric and duodenal ulcers

Opie,[4] Meltzer [5] and Mann [6] have shown that the bile entering the pancreatic duct under certain circumstances results in an inflammation of the gland similar to that of interstitial pancreatitis Several years ago Archibald [7] called attention to the fact that bile might be forced into the pancreatic duct as a result of the spasmodic contraction of the sphincter muscle at the end of the duct He further suggested that remedies to overcome this would relieve the pancreatitis Knowing that removal of the gallbladder cures most patients who have cholecystitis and pancreatitis, Mann and I removed the gallbladders from animals in order to study the changes which occurred as a result of the loss of this organ Apparently there was an attempt to compensate for the loss of the functions of the gallbladder The first change was dilatation of the common duct, and the second, paralysis of the sphincter at the entrance of the duct into the duodenum This seemed to explain why removal of the gallbladder relieved inflammation in the pancreas, if it were due to an influx of bile, the result of a spasmodic condition of the sphincter muscle If it were due to an extension of infection from the gallbladder through the lymphatics, then, naturally, removal of the infected gallbladder would afford relief

The mechanism of the excretory apparatus of the liver is not altogether understood The gallbladder seems to have several important functions, and yet when it is destroyed or removed, these are well compensated by changes in the bile ducts, and in the operation of the control sphincter at the end of the common duct So far as we can determine, no serious consequences follow loss of the gallbladder We have many patients under observation from whom the gallbladder was removed years ago, and nothing abnormal can be detected, no gross or microscopic changes in the liver or pancreas result

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* Read before the Section on Surgery, General and Abdominal at the Seventy Second Annual Session of the American Medical Association Boston June 1921

1 Graham E A Hepatitis A Constant Accompaniment of Cholecystitis Surg, Gynec and Obst **26** 521 537, 1918

2 Sudler M T The Architecture of the Gallbladder Bull Johns Hopkins Hosp **12** 126 129 1901

3 Maugeret quoted by Deaver J B Surgical Anatomy Philadelphia P Blakiston s Son & Co **3** 816 1903

4 Opie E L Disease of the Pancreas Philadelphia J B Lippincott & Co 1903

5 Meltzer S J The Disturbance of the Law of Contrary Innervation as a Pathogenetic Factor in the Diseases of the Bile Ducts and the Gallbladder Am J M Sc **153** 469-477 1917

6 Mann F C Personal communication

7 Archibald E Does Cholecystenterostomy Divert the Flow of Bile from the Common Duct? Canad M A J **2** 557 562 1912

ENTRANCE OF BILE INTO PANCREATIC DUCTS

It has been shown that pancreatitis may result from the injection of bile into the pancreatic duct Mann has recently performed a series of experiments to determine the conditions under which bile must enter the ducts in order to produce this change in the gland He divided his work into several studies and investigated

TABLE 1—CHOLECYSTITIS WITH PANCREATITIS—FORTY EIGHT CASES

	Years
Average age of patients	42
Oldest	66
Youngest	22
Longest duration of symptoms before operation	forty years
Shortest duration of symptoms before operation	two months
	Operations
Cholecystectomy	48
Choledochostomy	15
Appendectomy associated with other operations	35
Gastro enterostomy associated with other operations	2
Oophorectomy associated with other operations	1
Condition Found at Operation	**Cases**
Jaundice	9
Stones in the gallbladder	46
Stones in the common duct	8
Regional lymphatics enlarged	6
Cholecystitis Grade 1	0
Cholecystitis Grade 2	32
Cholecystitis Grade 3	12
Cholecystitis Grade 4	4
Hepatitis Grade 1	1
Hepatitis Grade 2	0
Hepatitis Grade 3	2
Hepatitis Grade 4	0
Abscess of the liver	2
Pancreatitis Grade 1	28
Pancreatitis Grade 2	19
Pancreatitis Grade 3	1
Pancreatitis Grade 4	0
Data Obtained from Recent Letters of Inquiry	
Cured (attacks of diarrhea in 3)	30
Unimproved	2
No reply	16

the cause or causes of pancreatitis, both acute and chronic, with reference to the bile He found that in the goat, the pancreatic duct empties directly into the common bile duct, several centimeters from the entrance of the latter into the duodenum This offers an ideal natural anatomic condition as a means of determining whether there is a physiologic mechanism which can, under sufficient pressure, force bile into the pancreatic duct and produce pancreatitis Accordingly, the common bile ducts in five goats were doubly ligated and sectioned distal to the entrance of the pancreatic duct, and the animals were allowed to live for various lengths of time None developed acute pancreatitis and none died from the effects of the bile being forced into the pancreatic duct, although bile was forced into the pancreatic duct as was easily demonstrated in two animals that lived for three or four weeks after the operation In both, the pancreas was stained greenish throughout, and the pancreatic ducts were dilated and filled with a greenish fluid On abrasion of the pancreatic surface, bile could be forced through by pressure on the gallbladder, and while the pancreas showed well-marked pancreatic changes, the changes simulated more nearly those following duct occlusion than those following the injection of bile Many observers have demonstrated that in a large number of experiments, the injection of bile into the pancreatic duct with a syringe produces acute hemorrhagic pancreatitis However, injecting a fluid such as bile with a syringe under very high pressure, causes a definite trauma to the gland Mann, therefore, conducted experiments to determine the maximum pressure that could be developed in the common bile duct

The pressure in the common bile duct is due to three factors the secretory pressure of the liver, the contractile pressure of the gallbladder, and the mechanical pressure on the liver and biliary ducts by the abdominal muscles and the diaphragm The maximum pressure produced in the common bile duct, the result of a combination of all these factors, was studied, and attempts were made to analyze the component parts of each The experiments were performed on dogs with permanent biliary fistulas, that is, through an especially devised technic the common bile duct was transplanted to the skin and the pressure recorded by passing a catheter into the common duct and connecting by means of a "T" tube to a straight glass tube and the pressure then recorded in terms of millimeters of bile The animals thus operated on and studied were quite comfortable, and many observations were made extending over long periods These observations demonstrated

1 The secretory pressure of the liver is seldom greater than 350 mm of bile

2 The contractile pressure of the gallbladder is difficult to estimate, but in no instance could it be determined that it was any greater than the maximum secretory pressure of the liver As a matter of fact, it is questionable whether the gallbladder ever contracts and produces pressure greater than 300 mm of bile There seems to be no doubt that the gallbladder has a contractile mechanism exerting pressure on the biliary tract, but the contractile power of its own intrinsic muscle has been greatly overestimated

TABLE 2—CHOLECYSTITIS WITH CIRRHOSIS—THIRTY ONE CASES

	Years
Average age of patients	46
Oldest	70
Youngest	29
Average duration of symptoms	6
Longest twenty years shortest (papilloma of gallbladder) one month	
	Operations
Cholecystectomy	19
Choledochostomy	6
Gastro enterostomy for duodenal ulcer associated with other operations 1 excision of duodenal ulcer associated with other operations 1	
Cholecystostomy	6
Appendectomy associated with other operations	20
Condition Found at Operation	**Cases**
Jaundice	6
Stones in the gallbladder	12
Stones in the common duct	8
Cirrhosis Grade 1	26
Cirrhosis Grade 2	5
Cholecystitis Grade 1	9
Cholecystitis Grade 2	14
Cholecystitis Grade 3	7
Cholecystitis Grade 4	1
Pancreatitis Grade 1	6
Pancreatitis Grade 2	3
Pancreatitis Grade 3	3
Enlargement of the regional lymphatics	6
Data Obtained from Recent Letters of Inquiry	
Cured	17
Not improved	2
Not heard from	12

3 The mechanical effect of the abdominal muscles and of the diaphragm on the liver is the most marked in producing changes in the intraduct pressure Deep respiratory movements and struggling produce greater fluctuations in pressure in the common bile duct than is possible by the secretory pressure of the liver or by contraction of the gallbladder

Thus far, Mann has found only one condition, the act of vomiting, under which the pressure in the common bile duct is greatly increased If the animal is

made to retch, the intraduct pressure increases enormously, reaching as high as 1,000 mm of bile After having determined the maximum pressure that can be exerted on the bile in the common bile duct, Mann investigated the effect of the injection with a syringe of bile into the pancreatic duct under such a range of pressures As has been stated, if bile is injected into the pancreatic duct with a syringe, acute pan-

TABLE 3—CHOLECYSTITIS WITH AN ASSOCIATED HEPATITIS—FORTY SEVEN CASES

	Years
Average age of patients	49
Oldest	69
Youngest	21
Average duration of symptoms	9
Longest, thirty two years shortest, three months	
	Operations
Cholecystectomy	41
Choledochotomy	6
Cholecystostomy	2
Appendectomy	25
Splenectomy associated with other operations	1
CONDITION FOUND AT OPERATION	Cases
Jaundice	5
Stones in the gallbladder	22
Stones in the common duct	3
Regional lymphatics enlarged	7
Cholecystitis Grade 1	14
Cholecystitis, Grade 2	22
Cholecystitis, Grade 3	6
Cholecystitis, Grade 4	5
Hepatitis Grade 1 (local in 7)	22
Hepatitis Grade 2	12
Hepatitis Grade 3	9
Hepatitis Grade 4	4
Liver larger than normal	3
Pancreatitis Grade 1	7
Pancreatitis Grade 2	6
Pancreatitis Grade 3	1
Present condition reported by letter satisfactory	24
Present condition the same or with recurrent attacks	4
Present condition not reported	19

creatitis usually occurs and quite frequently the outcome is fatal If bile is injected under pressure of 500 mm, or a pressure greater than the secretory pressure of the liver and the contraction of the gallbladder, acute pancreatitis does not occur If the bile is injected under a pressure of 1,000 mm, which was the maximum pressure produced in the common bile duct, namely, that produced by vomiting, acute pancreatitis may occur, although rarely From this, Mann concludes that even if a stone or the action of the sphincter should convert the pancreatic and common bile ducts into a continuous channel, only under exceptional conditions, such as struggling or vomiting would it be possible to inject bile into the pancreatic duct under sufficient pressure to produce pancreatitis

In order to determine whether it would be possible for the sphincter to convert the common bile duct and the pancreatic duct into a continuous channel, as has been suggested by Archibald, the sphincter at the end of the common bile duct was examined in four species in which the two ducts enter together, namely, the dog, the cat, the monkey, and man The examination of several hundred sections of the sphincter showed clearly that in almost all instances the muscle fibers are intimately connected with both ducts so that a contraction of the sphincter will simultaneously close both the common bile duct and the pancreatic duct and will not convert them into one continuous channel However in two instances, both in cat and in man considerable muscle tissue has been found distal to the point of common entrance of the two ducts, so that there is a vague possibility that contraction of the sphincter might allow bile to be forced into the pancreatic duct

The relation of the common bile duct to the pancreatic duct was studied in 170 necropsies, for the purpose of determining the percentage of instances in which the anatomic arrangement was such that it would be possible for either a stone or the action of a sphincter to convert the two ducts into one continuous passageway This seemed a possibility in only 4 5 per cent From these data it may be concluded that

1 Only exceptionally is there a physiologic mechanism which can inject bile into the pancreatic duct with sufficient force to produce pancreatitis

2 Only very exceptionally is there an anatomic arrangement whereby the ducts can be converted, either by a stone or by the action of the sphincter, into a continuous passageway permitting bile to flow from the common duct into the pancreatic duct

3 While there is no doubt that pancreatitis is sometimes due to or associated with the passage of bile into the pancreatic duct, our data tend to support the hypothesis that the number of such instances must be exceedingly small

If Mann's conclusions regarding the bile factor in the etiology of pancreatitis are correct it would seem that, in most cases at least, we must search elsewhere for the cause It will most likely be found, as Deaver says, in the extension of infection to the pancreas through the lymph channels

In this experimental work, we must take into consideration the fact that the bile which regurgitates into the pancreatic duct is normal bile and has not been changed by infection It is possible that the infection in cases of cholecystitis changes the bile so that it readily causes trouble in the pancreas Archibald has shown that infection reduces the protecting power of the mucus

CHOLECYSTITIS ASSOCIATED WITH HEPATITIS

In a number of instances during operations in cases of pancreatitis, we have removed small pieces of tissue from the pancreas for study This was done particularly if diabetes was present Nicoll[8] carried out the same procedure in a series of cases The information obtained thus far has not aided in studies to determine the cause of pancreatitis

Hepatitis does not always greatly change the gross appearance of the liver and often cannot be recognized except microscopically The liver may be slightly enlarged, although the enlargement is detected with difficulty even on careful observation Kehr[9] estimates the enlargement as 15 per cent and Graham[1] 87 per cent It has seldom been observed in our cases In some instances, there is apparently an edema in the hepatic tissues, which causes a rather rounded liver edge, but in most cases the edge is sharp The surface in the region of the gallbladder is whiter, often mottled, with numerous white dots and lines The inflammation of the liver is characterized by a leukocytic infiltration of the interlobular or periportal sheaths This may progress to the stage of necrosis and fat infiltration and in the more chronic cases may present the picture of an early cirrhosis The clinical manifestations are not clear-cut and are probably obscured by the inflammation in the gallbladder

8 Nicoll J H Remarks on the Frequency Diagnosis and Treatment of Chronic Pancreatitis Brit M J 2 625 627 1919
9 Kehr quoted by Graham Footnote 3

In our necropsy studies we have observed that hepatitis is always found in association with gallbladder and bile tract infections and is never seen in association with ulcers of the stomach and duodenum or inflammation of the appendix

With the idea of learning the part played by inflammation of the liver, I recently reviewed the histories of 1,290 gallbladder cases in which operation had been performed in 1919 The operations were performed by ten surgeons in the clinic, and the observations on the degree of hepatitis and pancreatitis probably varied with the individual surgeon's particular interest in the conditions

Forty-seven cases of cholecystitis with hepatitis were chosen for study In many of these, a piece of liver tissue was excised for microscopic study at the time of the operation There were undoubtedly many other cases of hepatitis in the series, but in some, the inflammation was so slight that it was not recognized, other cases were ruled out from this study because of complications

A careful review of the clinical histories did not reveal anything suggesting involvement of the liver Each contained a more or less typical history of cholecystitis The average duration of symptoms was nine years The longest duration was thirty-two years and the shortest three months There were stones in the gallbladder in twenty-two of the forty-seven cases, and in the common duct in three cases Slight jaundice was present in five cases, and without the evidence of biliary cirrhosis which is found in the obstructive cases The gallbladder was removed in forty-one of the cases and drained in two, the common duct was also drained in six cases The regional lymphatic glands were markedly enlarged in seven cases, they were undoubtedly somewhat enlarged in many others The liver was estimated to be greatly enlarged in three cases No attempt was made actually to measure the liver, and it may have been somewhat enlarged in many more cases Both pancreatitis and hepatitis were associated in fourteen of the cases

All of the forty-seven patients recovered satisfactorily from the operation, and we have been able to trace twenty-eight Twenty-four are practically well four were not greatly benefited and have since had similar attacks It is more than one year since the operation, which would seem sufficient time for complete restoration of the liver, so it is quite probable that the present symptoms are not due to hepatitis

Besides these forty-seven cases there were also thirty-one in which the changes in the liver had advanced to cirrhosis The cirrhosis was not suggested by the clinical features Pancreatitis was associated in twelve of the thirty-one cases In spite of the diseased liver and pancreas seventeen of the eighteen patients we have traced report that they have been practically well since the operation for cholecystitis Two patients have not thus far improved Since the large percentage of the patients are improved as a result of the treatment, the hypothesis seems to be sustained that cholecystitis is the primary lesion and treatment for it also relieves the infection in the liver

Of the total number of 1,290 gallbladder and bile duct cases, 347 (26 8 per cent) had associated pancreatitis For a comparative study of the cases of cholecystitis with hepatitis and cirrhosis, we selected forty-eight cases of cholecystitis with pancreatitis The clinical histories in such cases do not as a rule suggest pancreatitis The condition was determined at the time of operation by enlargement in the pancreas, more frequently in the head, in others the pancreas was generally hardened On palpation it was found to be more firm than normal and the lobules could be felt as separate pieces of gland , Often an irregular rough surface, frequently with a sandy or shotlike feel, could also be palpated Edema was often present Thirty of the forty-eight patients have been well one year after the treatment of the gallbladder disease, two are not improved No reply was received from letters of inquiry to sixteen

Stones were present in the gallbladder in forty-six cases and in the common duct in eight The common duct was drained in fifteen cases While the lymphatic glands were undoubtedly enlarged in many, they were noted only in six This does not mean that more of these cases were not cases of pancreatic lymphangitis, but simply that the lymph nodes were not large enough to attract attention

COMMENT

1 A review of our studies inclines us to believe with Graham that cholecystitis rarely exists without hepatitis Often the inflammation in the tissues of the liver is so slight that it is not noticed unless special effort is made to detect it The close association of the liver and the gallbladder by the lymphatics makes extension of the infection from one to the other very easy

2 Pancreatitis occurs frequently with cholecystitis, and as a result a definite gross change occurs in the pancreas While it is possible that the inflammation in the pancreas may be due to the influx of bile into the pancreatic duct, Mann's recent experiments show that this does not occur except under unusual conditions It is possible for infection to invade the pancreas by way of the lymphatics from the gallbladder, and in many cases this probably explains the source of the infection It is apparently entirely relieved by the treatment for the cholecystitis

3 We were unable to find in the clinical histories of patients known to have hepatitis any symptoms that were especially suggestive of the inflammation The same may be said of the patients in whom the liver changes had progressed to a stage of cirrhosis

4 It is possible that the incomplete relief of symptoms and the recurrences in a small number of these cases are due to inflammations in the liver or pancreas

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS DEAVER AND SWEET AND JUDD

DR ALBERT J OCHSNER Chicago The conclusions in both papers seem reasonable to me ,Our observations are hampered because of the condition under which we have to work The necropsy findings are not as satisfactory as they should be After death the postmortem changes are marked in the pancreas unless necropsy is made immediately because of the postmortem secretion and digestion Our experimental observations are difficult and somewhat unreliable because it is quite impossible to perform these experiments with the same abnormal secretions of bile and pancreatic fluid that cause the pathologic condition in the human being Except in case of trauma, acute pancreatitis, or thrombosis the process is a slow one Again, in the study of the pancreas during surgical operations the observations must be made by many different surgeons with different impressions on the examination of the same condition Whatever we do in the way of treatment may have its effect on these conditions, but we are

practically never in position to reexamine the organ and determine what the effect has really been There is a principle which is carried through the physiologic action of all the organs that have secretion which may accumulate to the effect that there is a marked difference in the effect of the various fluids when drainage is normal and when there is stasis Whenever there is stasis the fluid that accumulates has an opportunity to degenerate, using degenerate in the broad sense, while the fluid in the same gland when constantly expelled normally does not have this peculiar opportunity of degeneration This fluid, when it has degenerated because of stasis, has an entirely different effect on the organ that has secreted it from what it has after having been contaminated only in the ordinary way through the circulation This fact interferes to a marked extent with the reliability of experimental observations It would be unreasonable to suppose there could be direct destruction of the secreting gland cells of the pancreas by direct contact because of the character of these cells They are located at a point at which they must be capable of exposure to an enormous amount of insult without harm to them As a matter of fact, barring trauma, it is practically impossible to injure these cells directly because of contact with bile or pancreatic fluid, and as a matter of fact also the result of injury affects the glands not primarily, but only secondarily after they have become influenced by the connective tissue which is the result of long continued irritation Irritation cannot come directly from the gland tissue, but must come from the lymphatics, and consequently my reading of the experiments of Archibald would correspond with that which Dr Deaver has given us Our practical conclusion must be that were there no stasis of diseased bile which through this stasis becomes dangerous there would be no pancreatitis, except, of course, from trauma or ulceration I have seen gastric ulcers penetrating the pancreas in the tail and body As a matter of fact, removing the possibility of stasis, we have removed, so far as possible, the cause of the trouble

Clinical Notes, Suggestions, and New Instruments

A NEW INSTRUMENT FOR THE ENUCLEATION OF TONSILS IN CAPSULE

DAVID L FLANARY M D ST LOUIS

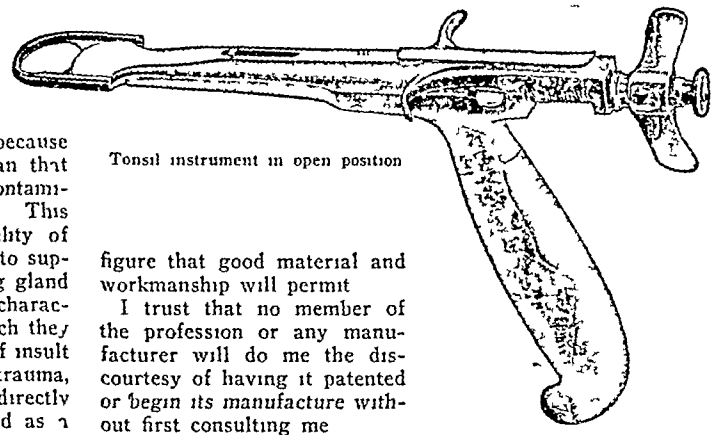
The accompanying illustration shows the instrument in the open position

Tonsil enucleation in capsule is no new idea The only thing new is in the mode of removal Since the first advocate of the removal of tonsils in capsule, a number of instruments have been brought forward Most of these instruments, in the hands of some men did beautiful work But as most of the instruments are used by physicians that are not ambidextrous and some of them not over strong in their hands, I felt that this instrument would make their work easier

This instrument is held as one would an automatic pistol On each side of the dull blade there is a thumb rest, with which to send the blade home without releasing the grip on the handle Underneath the blade and set in the back end of the cutter-bar is a catch spring, which catches every sixteenth of an inch of the blade sent home If, perchance, one catches a portion of the anterior pillar, or fails to engage all of the tonsil, one just touches the side of the catch spring with the thumb of the same hand that is holding the instrument and the blade will rebound, by a spring embedded in the breast of the cutter-bar, to be sent down again by the thumb that touched the spring

This release feature enables the operator to retain the index finger of the other hand in the mouth against the tonsil, and prevents his having to remove this finger from the mouth in order to get the blade back, when it has gone down wrong, as in the case with all other instruments When the blade has been sent down firmly behind the tonsil with the thumb and anchored by the catch spring, it is then forced home by the propeller on the back end of the cutter-bar

The instrument is light, well balanced and easy to clean It comes to the profession for what it may be worth, unpatented and without royalty, so it is to be had at the lowest figure that good material and workmanship will permit



Tonsil instrument in open position

I trust that no member of the profession or any manufacturer will do me the discourtesy of having it patented or begin its manufacture without first consulting me

Acknowledging with gratitude my indebtedness to all those that have labored in this line before me, I affectionately give this instrument to the profession

NEW TONSIL INSTRUMENT

HENRY M GOODYEAR, M D CINCINNATI

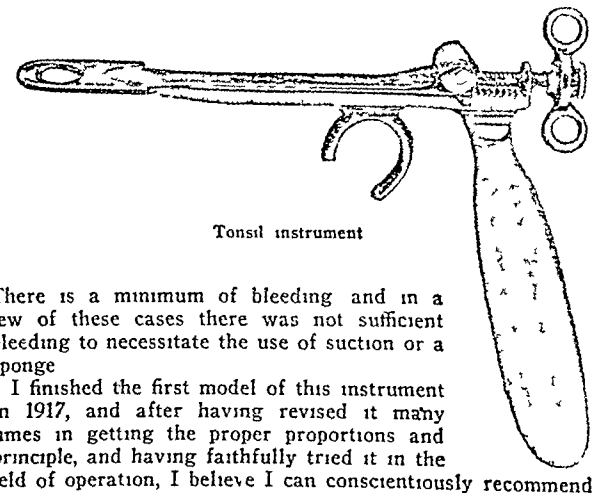
The accompanying illustration of this instrument is sufficient to explain the general mechanical construction As to application, the instrument is applied to the tonsil after the fashion of any tonsil enucleator built on the plan of a permanent ring fenestrum

The handle is so placed that the force is applied at right angles to the point of application to the tonsil

After engaging the tonsil through the fenestrum, the finger piece is raised, locking automatically, and the final enucleation is completed by slowly turning the ringed screw at the top

The dull ring separates the tonsil from behind forward, following the line of extracapsular clearage, and bluntly dissecting the tonsil from its bed

More than a hundred operations have been performed with the latest model of this instrument, and it has been found practically impossible to injure the tonsil pillars or the superior pharyngeal constrictor muscle back of the tonsil, the tonsil coming away in its capsule, clean of muscle fibers



Tonsil instrument

There is a minimum of bleeding and in a few of these cases there was not sufficient bleeding to necessitate the use of suction or a sponge

I finished the first model of this instrument in 1917, and after having revised it many times in getting the proper proportions and principle, and having faithfully tried it in the field of operation, I believe I can conscientiously recommend it as an instrument simple and durable in construction, which gives the minimum of bleeding and trauma, with a complete and simple enucleation of the tonsil It is especially well adapted to general tonsillectomies in children

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SATURDAY JULY 16 1921

EDEMA IN DIABETES

Edema is commonly associated with cardiac or renal disturbances, hence the expressions cardiac or nephritic edemas have found considerable vogue in medical literature The edema of heart disease depends in large measure on stasis of blood in the systemic veins, but this is by no means always the sole factor concerned Doubtless, local circulatory changes and chemical peculiarities of certain tissues may be contributory in the genesis of cardiac edema All of these occasionally come into play in the case of pulmonary edema Nephritic edema is frequently treated as a condition in which water is retained in the body owing to inability of the kidneys properly to eliminate salts, notably sodium chlorid There is no longer any doubt, however, that the water retention may in some instances be the primary disturbance, the retention of salt being secondary and necessary to maintain a more normal composition of the body fluids

Edema has long been known in diabetes as a complication which may become extreme When it results in a noteworthy gain in weight, it may become a source of error As has been pointed out by Joslin,[1] patients may seem to be gaining when in reality they are losing weight because of insufficient diet So, likewise, slight changes in body weight which may accompany dietetic alterations or the ingestion of sodium chlorid and sodium bicarbonate are looked on as material gains and are thus liable to be misunderstood by the patient Joslin remarks, further, that diabetic edema occurred most frequently in former years following oatmeal days and the administration of alkalis, but now is common with fasting diabetics of severe type and is apparently related to the large quantity of salt which they ingest with broths and vegetables

This is by no means, however, the sole cause or the whole story of diabetic edema Wilder and Beeler[2] have lately reminded us that the symptom may arise in cachectic patients without signs of albuminuria or other evidence of disease of either heart or kidneys Oliguria need not accompany the formation of the edema, this depending more on increased intake of water than on the suppression of urine Likewise, no very marked suppression of salt excretion is evident, a large daily excretion of sodium chlorid accompanies the maximal edema The feeding of sodium chlorid, as has long been known, favors the formation of the edema, but a rising edema occurs at times with a normal salt intake Many of these phenomena are in striking contrast to conditions existing in cardiac or nephritic edemas

Evidently, undernutrition plays peculiar havoc with the water balance of the organism It appears that severe inanition may be attended with a lowered renal threshold for chlorids when nephritis is not a complicating factor Why should edema thereupon arise? According to the investigations at the Mayo Clinic, both the edema and the behavior of the chlorid threshold are independent of the state of the acid-base equilibrium of the body, as measured either by the carbon dioxid capacity of the plasma or by the titratable acid or ammonia excretion of the urine Increasing edema and lowering chlorid threshold may accompany diminishing acidosis, and vice versa They are likewise independent of the degree of glycemia and of the presence or absence of glycosuria Hence, Wilder and Beeler conclude that edema in diabetes differs fundamentally from the edemas in diseases of the heart and kidneys The determining factor seems to be inanition, which relates it to the hunger edema of war times and other edematous conditions of undernutrition

1 Joslin E P Treatment of Diabetes Mellitus Philadelphia Lea and Febiger 1917 p 124

2 Wilder, R M and Beeler C Plasma Chlorids and Edema in Diabetes Am J Physiol 55 287 (March) 1921

CRITIQUE OF GASTRIC ANALYSIS

Those who read the literature of gastro-enterology must be impressed by the apparent conflict of opinions that prevails with respect to many fundamental factors in this department of medicine The situation has become so complicated that many practitioners have frankly confessed their inability to derive as much dependable information from modern gastric analysis as the importance and the long maintained prominence of the subject would seem to warrant Somehow it appears to many as if more real therapeutic helpfulness was forthcoming in the earlier days of simple estimations of "free" and "total" acidity developed by the Ewald test breakfast or the Riegel test dinner than is now furnished by the almost innumerable procedures of gastric examination, including roentgen-ray observations which will soon be able to claim a history of a quarter-century

An explanation of some of the causes of the existing confusion and corresponding lack of confidence in the diagnostic claims of the gastric clinic has recently been ventured in THE JOURNAL by Rehfuss and Hawk[1] They point to the frequent inability to discriminate

1 Rehfuss M E and Hawk P B Gastric Analysis I Fundamental Principles J A M A 76 371 (Feb 5) 1921

between the limitation of the roentgen-ray examination and that of gastric analysis The latter, according to their interpretation, is simply a measure of gastric work involving three important factors (*a*) gastric motor function, as shown by the duration of digestion manifested after the administration of a certain test meal, (*b*) secretory function, which is the sum total of all the factors, extragastric and intragastric, making up the secretory curve, and finally (*c*) the determination of evidence of a pathologic condition of the stomach, such as mucus, pus, blood, bacteria, organic acids or protein, which in themselves are either contributed by the lesion, or are occasioned by it

If gastric analysis is at present designed to measure the sum total of gastric work, it must be obvious that the results at any period may vary with the task imposed upon the digestive organ Doubtless, investigators will differ widely in their judgment as to what type of test meal will best elicit desired information It would seem, however, as if today the assumed advantages of one or the other meal were overshadowed by the extreme variety of procedures, resulting almost in complete chaos in the mind of the untutored practitioner We heartily agree with the Philadelphia gastro-enterologists that "one of the greatest drawbacks in gastric analysis is the lack of standardization" There is no ideal test meal The requirements have been tersely stated by Rehfuss and Hawk The meal must be accessible, of an average short evacuation time, and must not interfere with the detection of pathologic products They favor the Ewald meal, owing to its simplicity, accessibility, stimulating power, and particularly our accumulated knowledge of its value in both normal and pathologic conditions of the stomach At present, complexity of test meals merely spells confusion

Another innovation in diagnostic procedure for gastric examination is represented by the "fractional method" of withdrawing contents for analysis Small portions, not exceeding 10 c c (one-third ounce), are aspirated at intervals of fifteen minutes with the avowed object of following more carefully the successive phases of the digestive phenomena This practice, already widely employed, is presumably based on the assumption that the gastric chyme, after a test meal, is a homogeneous mixture so that a sample withdrawn in the current manner represents the acid concentration of the gastric contents as a whole at any given period of digestion The investigations of Gorham[2] indicate that the assumption may become untenable, particularly in conditions of disease The "sample" obtained by the "fractional method" only represents the acidity of the gastric chyme at that moment in the part of the stomach from which it is obtained, or, in other words, it is dependent entirely on the position of the tip of the tube in the stomach As Gorham shows, this position is necessarily a constantly changing one, owing, first, to the change of size and position of the stomach while emptying itself through the pylorus and by aspiration, secondly, to the shortening and lengthening of the stomach from gastric contraction, and, thirdly, to the peristaltic waves that tend to carry the tube toward the pylorus Hence Gorham insists that in order to speak of a quantitative gastric analysis, the stomach must be emptied completely at a definite time after a standard test meal This will be recognized at once as a return, in principle, to the old fashioned procedure of two decades ago

2 Gorham F D Variations of Acid Concentration in Different Portions of the Gastric Chyme and Its Relation to Clinical Methods of Gastric Analysis Arch Int Med 27 434 (April) 1921

ANTIRABIC INOCULATION FOR DOGS

Rabies is a disease that occurs virtually all over the world, and man invariably contracts it from some lower animal, usually the dog In view of the seriousness of the malady, preventive measures have long attracted the attention of hygienists The prophylactic treatment due to the epoch making investigations of Pasteur has attained a permanent place in medical practice Stimson[1] of the U S Public Health Service recently assured the readers of THE JOURNAL that rabies vaccine, prepared by various procedures, is now available throughout all portions of the United States to the extent that it may fairly be said that no exposed person need die of rabies for lack of injections Many health boards are prepared to furnish it free of cost to the indigent, and the cost of the commercial preparations is not prohibitive except to the destitute, for whom other provisions are made in almost every instance

Individual prophylactic treatment, of course, cannot in any sense be regarded as a satisfactory scheme for the prevention of rabies in a community The problem of the carrier of the materies morbi, the dog, is of greater moment Accordingly, in recent years the plan of destroying ownerless dogs, and of muzzling and keeping under restraint all others of the canine species, has been demonstrated as an effective mode of eradicating rabies where the restrictions are carried out rigorously The experience of England is often cited in illustration Consistent muzzling of all dogs, together with most radical restrictions on admission of dogs from foreign countries, produced almost complete elimination of rabies Owing to the enormous area to be policed in this country, it is not so easy to carry out the systematic control of the dog population Whenever rabies becomes more prevalent than usual in any state, however, restrictive measures are likely to be put into operation until a period of comparative safety leads to renewed indifference

According to recent advices from Japan, rabies, which formerly occurred there in only a few instances and within narrow limits, is beginning to become more prominent, cases appearing in all parts of the country

1 Stimson A M Biologic Therapy XII Rabies Vaccine J A M A 76 241 (Jan 22) 1921

The method of prevention heretofore applied by killing rabid and stray dogs, and by confinement or muzzling of pet and licensed animals, has proved insufficient to eradicate rabies in Japan Umeno [2] and his co-workers at the Kitasato Institute for Infectious Diseases in Tokyo, believing that something more than dog control is required to combat the disease, have investigated the possibility of prophylactic inoculation which might be applied extensively to the canine population The procedure applied to man and involving many repeated injections of vaccines of varying potency or attenuation would obviously be impracticable in the treatment of large numbers of dogs However, the Japanese bacteriologists assert that they have succeeded in perfecting a method whereby a successful prophylactic inoculation may be made in one or two injections It has been tested on hundreds of dogs For example, during the year 1919, there were 14,644 registered pet dogs in Kanagawa Prefecture, of which 9,150 were vaccinated Among that large number of vaccinated dogs, there occurred no cases of rabies None suffered from infection after vaccination Umeno and his co-workers, who can now report on results involving more than 31,000 vaccinated dogs, assert that there has been a striking decrease of rabies, rabid dogs appearing only among the nonvaccinated Hence they advocate the prophylactic inoculatoin of licensed dogs in addition to the other measures now taken to remove the danger of rabies from the human population Like many hygienic proposals, this one concerns the welfare both of man and of the domestic animals

CIRCULATORY REACTIONS TO HEMORRHAGE

Hemorrhage represents one of the emergencies that occasionally present a serious situation to the functioning organism If loss of blood invariably brought about a lowering of arterial tension because of the depletion of the circulating fluid, the conditions ensuing might frequently be most unfortunate Lowered blood pressure is liable to lead to less efficient supply of blood to important bodily structures, with a consequent impairment of function owing to lack of adequate oxygen and tissue nutrients Low pressure may become synonymous with poor circulation

Numerous investigations have demonstrated, however, that unless the hemorrhage is extensive, this expected sequence of events does not occur Even after considerable hemorrhages, the fall in blood pressure rarely is as marked as might be anticipated What happens to counteract the inevitable tendency toward a depletion of the circulatory system? The pulse rate increases so that the return of venous blood to the heart is augmented More rapid breathing also facilitates the return flow from the abdomen It has long been known that fluid enters the blood from the tissues with extraordinary rapidity so as to replace some of the loss by hemorrhage It has been stated that this dilution of the blood occurs so rapidly that blood coming from an open artery becomes perceptibly lighter in color at the end of a few minutes of moderate bleeding [1] This is the reason it becomes so important therapeutically after hemorrhage to place at the disposal of the body sufficient liquid to enable the tissues to restore their temporary losses

Meek and Eyster [2] have lately demonstrated in experiments on animals that the volume output of the heart is rarely diminished after bleeding, except for a slight drop during hemorrhage, until the loss of blood amounts to about 2 per cent of the body weight By the use of roentgenograms taken of the heart before and after hemorrhage, it was shown that the diastolic size is maintained even after the loss of large quantities of blood In twenty-one experiments, each with from two to six hemorrhages, the heart did not decrease more than 5 per cent until the loss of blood on an average equaled 2 per cent of the body weight Ultimately, of course, the compensation breaks down with continued bleeding The steady decrease in blood volume is sharply contrasted with the sudden reduction in diastolic heart size which occurs when about 20 per cent of the blood is lost, and which would seem to indicate the breakdown of some protective mechanism, according to Meek and Eyster A unique advantage seems to lie in the retention of diastolic size of the heart, for modern researches have shown that, as in the case of skeletal muscle, the efficiency of cardiac contraction depends on the length of the muscle fibers

Will increased heart rate or dilution of the blood or both suffice to account for this beneficent protection against loss of cardiac efficiency after ordinary hemorrhage? Meek and Eyster think not They urge that accelerated pulse occurs only after considerable blood has been lost, and they maintain that the known observations will not justify attributing to the absorption of tissue fluid more than a secondary part in the maintenance of the cardiac diastolic size after hemorrhage Meek and Eyster find that the only satisfactory explanation is the conclusion that the effective circulation is kept up by constriction of the venules and capillaries, particularly those which have been more or less stagnant When hemorrhage in the intact animal reaches about 2 per cent of the body weight, the venules and capillaries of the ear may be seen markedly to constrict Since such a mechanism is thus shown by Meek and Eyster to exist, it becomes probable, as they say, that the compensatory reaction may have been operating in various parts of the body in earlier stages of the hemorrhage, and that in this way there is provided a constant venous return and cardiac output, even though the blood volume is decreased

2 Umeno S Vet and Doi Y A Study on the Anti Rabic Inoculation of Dogs and the Results of Its Practical Application Kitasato Arch Exper Med 4 89 (March) 1921

1 Hewlett, A W Pathological Physiology of Internal Diseases New York D Appleton & Co 1916 p 586

2 Meek W J and Eyster J A E Reactions to Hemorrhage, Am J Physiol 56 1 (May 1) 1921

Current Comment

METABOLISM IN INFANTILE ATROPHY

The intelligent management of the type of "infantile atrophy" in which there is inadequate growth at early ages demands information that has only recently become available It is conceivable that the failure of infants in this condition to grow properly may be due to some defect of metabolism resulting in an inability to utilize properly the available sources of energy Equally possible is the existence of alimentary conditions which render the digestion and absorption of food products faulty With respect to the fate of ingested proteins or fats in atrophic infants, the available evidence lends no support to the assumption that there is any lack of alimentary availability of these nutrients [1] The data which Fleming [2] has secured in a study of the respiratory exchange of cases of infantile atrophy at the Royal Hospital for Sick Children in Glasgow give testimony against any assumption that the tissues of such individuals are unable to utilize either fats or carbohydrates There is no extravagance in their metabolism, and the evidence indicates that in atrophy the essential constituents of the diet can be normally utilized when once they actually gain access to the metabolizing tissues By exclusion, some failure of alimentation must be held responsible for the state of malnutrition under discussion Fleming's inquiries place the probable blame on gastro-intestinal disturbances leading to defective absorption, especially of carbohydrates If this shall indeed prove to be an important factor in the production of atrophy, dietotherapeutic procedures are within the range of immediate consideration

WHAT IS AN ANTIBODY?

Within the last few years the words "antigen" and "antibody" have become terms in the vocabulary of practical medicine as well as in the science of immunology Discussion of the general phenomena of immunity can scarcely be carried on without reference to them An antigen is a substance which, on introduction into the body in proper amounts and under suitable conditions, induces the formation of a special antagonistic substance, the antibody At the present moment there are scarcely any well authenticated exceptions to the general rule that every soluble complete protein may serve in at least some degree as an antigen With respect to the cleavage products of the proteins the evidence of their antigenic properties is at most debatable, certainly none of the amino-acids or simpler polypeptids, i e, amino-acid complexes, can serve as antigens The alleged function of lipoids in this role is likewise not established Karsner and Ecker [3] insist, in fact, that if lipoids are obtained from animal tissues, favorable results may be obtained, but in none of these experiments is it proved that the lipoids are entirely free from proteins Far less is definitely known with respect to the nature of the manifold antibodies Diphtheria antitoxin, which has been studied longest in an intensive manner, has served as the prototype of this class of substances There has been much evidence to indicate its close relationship or association with certain proteins, notably the globulins of the blood It is not analogous to enzymes, if one may judge from the failure of antitoxin to be adsorbed by or removed from solution with a variety of indifferent precipitates The large size or colloid character of the antibody molecule is shown by its comparative non-diffusibility Recent studies by Huntoon, Masucci and Hannum [4] have helped to narrow the field of investigation somewhat by indicating more clearly than heretofore that antibodies do not belong to that group of proteins usually classed as serum proteins They showed, as others have previously indicated, that antibodies resist tryptic digestion—a fact which makes them unlike ordinary proteins Antibodies, furthermore, do not manifest those biochemical reactions and transformations which are at present ascribed to the ill-defined euglobulin and pseudoglobulin fractions of the blood Being insoluble in ether, they cannot be classed as lipoids or fats By knowing more precisely what antibodies are not, we may hope to succeed better in the coming years in learning more adequately what they really are

A PLEA FOR MEDICAL PROTOZOOLOGY

The occurrence of intestinal protozoa in man has long since ceased to be of concern to the student of tropical medicine alone Such organisms as the nonpathogenic parasite *Endameba coli* and the pathogenic *Endameba histolytica,* for example, now appear to have an unexpectedly widespread distribution among persons in temperate as well as in torrid climates The problems of the role of the protozoa of man, in health and disease, involving questions of identity of the parasites, their pathogenicity, the carrier state, the modes of transmission, the possibility of intermediate hosts, the therapy of the disturbances created, etc, have become so varied that they call for serious and extensive investigations in the interests of medicine It almost seems as if a faculty of experts were required to attack the numerous aspects of the new medical protozoology The need of more surveys of the occurrence of intestinal protozoa, in order to add to the present medical knowledge of the incidence of each species according to geographic range, age, race and occupation has been emphasized by Hegner and Payne [5] They urge physicians to direct more attention to the prevalence of intestinal protozoan parasites, thereby stimulating clinical work on pathogenesis and therapy If mankind is frequently harboring unsuspected invaders which produce local damage or elaborate chemical products that act as subtle poisons to the system, they need to be discovered For years the urine was the center of interest in certain features of clinical diagnosis, then the blood began to gain a prominence

1 Finkelstein H Jahrb f Kinderh 68 No 5 Rubner M and Heubner H Ztschr f Biol 38 315 1899 Hutchison H S Quart J Med 13 277 (April) 1920

2 Fleming G B An Investigation into the Metabolism in Infantile Atrophy with Special Reference to the Respiratory Exchange Quart J Med 14 171 (Jan) 1921

3 Karsner, H T and Ecker E E The Principles of Immunology Philadelphia J B Lippincott Company 1921 p 22

4 Huntoon F M Masucci P and Hannum E Antibody Studies, III Chemical Nature of Antibody J Immunol 6 185 (March) 1921

5 Hegner R W and Payne, G C Surveys of the Intestinal Protozoa of Man in Health and Disease Science Month 12 47 (Jan) 1921

formerly unachieved, now it is the feces that deserve to claim a share of attention in the careful diagnostic scrutiny of man Bacilli, spirochetes, blood plasmodia, intestinal protozoa, occasional fungi and yeasts—a motley army of enemies which we must learn to recognize and deal with sooner or later Why not soon?

ETIOLOGY OF THE COMMON COLD

Any one who first studies the numerous elaborate discussions and directions on the prophylaxis and treatment of those acute conditions known as the common cold in the upper respiratory tract will be profoundly disappointed at learning how little is definitely known about the etiology of the condition There is a widespread belief—or an assumption based on analogy with related diseases—that bacteria play a part in most colds If one asks, however, for evidence regarding the microorganisms actually involved in the primary cold, an answer will rarely be forthcoming One of the vague hypotheses requisitioned from time to time assumes that various types of bacteria are commonly harbored in the nasopharynx, and that only when the local resistance or the general immunity of the body is lowered by some unusual circumstance do they find opportunity to develop in harmful ways so as to produce coryza The primary disease manifested by hyperemic phenomena in the upper air passages should be clearly differentiated from local complications, chiefly due to pyogenic organisms, which frequently accompany a common cold They include sinus infections, middle ear infections, laryngitis, tracheitis and bronchitis—rarely pneumonia and sepsis Bloomfield [1] of the Johns Hopkins Hospital has lately come to the conclusion that none of the common bacteria found in the nose or throat have been proved to be the primary cause of colds In uncomplicated cases the flora differs in no fundamental way from that found in healthy persons, although it is distinctly richer and more varied This, Bloomfield reminds us, fits in with the old theory that the cold, whether produced primarily by temperature changes or by infection, leads to environmental alterations which, as it were, light up the bacterial flora already present in the pharynx Yet the presence of these organisms is too variable and inconstant to warrant the conclusion that they are the primary causes of colds Bloomfield finds the most convincing evidence in the scanty literature to favor a filtrable virus as the cause of the common colds This tentative conclusion recalls the pioneer statement of Kruse,[2] who instilled Berkefeld filtrates of dilutions of nasal secretion from patients with acute colds in the nasal passages of healthy persons, thereby developing typical colds in many of them Foster [3] has reported similar results in this country Correct treatment demands an exact knowledge of etiology Prophylactic inoculation with mixed vaccines has proved to be illusory Perhaps a reinvestigation of the theory of a filtrable virus will not be devoid of profitable outcome

1 Bloomfield A L Variations in the Bacterial Flora of the Upper Air Passages During the Course of Common Colds Bull Johns Hopkins Hosp 32 12 (April) 1921

2 Kruse W Die Erreger von Husten und Schnupfen München med Wchnschr 61 1547 1914

3 Foster G B Jr The Etiology of Common Colds J A M A 66 1180 (April 15) 1916 J Infect Dis 21 451 (Nov) 1917

Association News

REPORT OF SPECIAL COMMITTEE ON DEPARTMENT OF PUBLIC WELFARE

At the Boston session the President of the Association was authorized to appoint a committee to confer with the President of the United States on matters pertaining to public health (THE JOURNAL, June 18, p 1762) The committee has submitted the following report to the President of the Association

Washington D C.
July 6, 1921

Dr Hubert Work, President
American Medical Association

We the members of the special committee appointed by you make this preliminary report

The committee has held three meetings in Washington As a result of these conferences, we believe that the administration and members of the Congress who are responsible for the organization of the contemplated Department of Public Welfare do not have in mind the establishment of a federal medical paternalism, or do not intend in any way to interfere with the practice of medicine and surgery as now carried on by legally licensed practitioners

We believe that the main and important object of the impending federal legislation is to secure coordination of all existing federal bureaus and agencies relating to the welfare of the public in one department of the government, to standardize public health and other welfare work of the government to secure cooperation with the respective state governments in all matters relative to public health and welfare

The committee will maintain its active consideration of these measures and will attempt to secure the adoption of the foregoing principles in the finally completed legislation

C E SAWYER, M D CHARLES W RICHARDSON, M D
G D DE SCHWEINITZ, M D THOMAS S CULLEN, M D
FRANK BILLINGS, M D

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES NEW HOSPITALS, EDUCATION PUBLIC HEALTH ETC)

CALIFORNIA

Personal—Dr William Edler, public health service, formerly director of the U S Interdepartmental Social Hygiene Board, Los Angeles, has been transferred to take charge of the government hospital in Tacoma, Wash, where mental cases are being treated

Chiropractors Given Jail Sentence—Refusing to stop the practice of chiropractic without a license, Alice Huhn of Anaheim was sentenced, May 27, to sixty days in the county jail——It is reported that F B Whidden, publisher of the *California Chiropractor* was sentenced, June 17, to sixty days in jail for practicing without a license

COLORADO

Emergency Hospital at Pueblo—At the request of the governor of Colorado immediately after the recent flood at Pueblo, the authorities of the Fitzsimons General Hospital, near Denver, organized and established an emergency hospital to take care of the sick and injured, and connected it by wireless with Fitzsimons Hospital The relief expedition included eleven officers, fifteen nurses and twenty-five enlisted men of the medical department, with Major Shelly U Marietta, M C, U S Army, in command

DISTRICT OF COLUMBIA

Annual Meeting of Medical Women—At the annual meeting and supper of the Institute Fraternity held June 23, at the home of Dr Julia M Green, Washington, Dr Addisone Boyce, New York, spoke on the "Future of Women in Medicine" Dr Mary Elizabeth Hanks, Chicago, was toastmistress

ILLINOIS

Gift of Laboratory to Hospital—The Rockford Hospital has received the gift of a completely equipped laboratory from Mrs Walter A Forbes, as a memorial to her parents, Mr and Mrs Seeley Perry of Rockford

Personal—Dr George G Taylor Elkhart, chief of the division of social hygiene, has resigned He will devote his entire time to work in connection with the U S Public Health Service with which organization he holds a commission as surgeon Dr Taylor will probably be assigned to duty in Illinois

Medical Practice Act Annulled—In a decision handed down by the April term of the Illinois Supreme Court the medical practice act that became operative July 1, 1917, was annulled The court held that the law is unconstitutional and is, therefore, void for the reason that Section 5 of the statute (medical practice act) unlawfully and unjustly discriminates against one class of practitioners From the attorney-general comes the opinion that the act of 1899 with its amendments now automatically becomes effective It is understood that the attorney-general has advised against asking a rehearing of the cases as the opinion was unanimous

Venereal Disease Campaign to Continue—Although federal aid for the fight against venereal disease in Illinois ceased on July 1 1921, because Congress failed to appropriate the necessary funds, the campaign will continue with the same vigor and aggressiveness that has characterized the work during the last three years The fifty-second general assembly set aside $200 000 for this important phase of public health service for the current biennium The division of social hygiene will, therefore be able to carry on' Owing to the uncertainty of continued federal or state financial aid, the nineteen clinics now operating in Illinois slowed up somewhat in their activities during the last few months An agent of the department is making the round of these clinics with the good news that the usual funds will be forthcoming from the state The message has proved to be very stimulating

KENTUCKY

Physician's License Revoked—It is reported that at a meeting held May 25 the state board of health revoked the license of Dr Charles L Cawein, Louisville who is under indictment charged with murder in connection with the death of a patient following a criminal operation

LOUISIANA

Personal—Dr Stephen W Stafford New Orleans, superintendent of the Charity Hospital since 1897 resigned on account of physical indisposition Dr William W Leake, former assistant surgeon of the Illinois Central Railroad Hospital, has been appointed to succeed him

MARYLAND

Infant Malady Increases—Three cases of infantile paralysis have been reported to the Baltimore City Health Department during the past week Previous to last week there had been but three cases since the first of the year—one in January one in February and one in June Officials of the department are not alarmed over the reporting of three cases in one week, but are watching the situation closely

Personal—Dr Robert P Bay has been appointed acting chairman to the board of supervisors of city charities to succeed Dr J Hall Pleasants resigned——Dr Martin R Casey of Weston, W Va has been appointed assistant to Dr Charles J Carey superintendent of the Eastern Shore State Hospital at Cambridge Prior to his appointment Dr Casey was assistant superintendent of the West Virginia State Hospital——Dr Alan M Chesney of Baltimore class of 1912 Johns Hopkins Medical School has been appointed associate professor of medicine at the Johns Hopkins Medical School This is the first of a number of appointments to be made by Dr G Canby Robinson recently made head of the department of medicine Dr Chesney will succeed Dr Alphonse R Dochez and will have charge of the bacteriologic division of the medical clinic at the hospital

MASSACHUSETTS

Personal—Dr Francis W Peabody Harvard Medical School has been appointed chief of the Harvard Teaching Service in the Boston City Hospital He will also become director of the Thorndyke Laboratory in the City Hospital He has been selected to represent Harvard at the dedication of the new building of Peking Union Medical College China in September and also at the medical conference which will be held at the same time

Dr Cabot Entertains Physicians at Cohasset—The seventy-five physicians who remained at Boston after the annual session of the American Medical Association to take the course of lectures at the Massachusetts General Hospital, on "Differential Diagnosis given by Dr Richard C Cabot Harvard Medical School, were entertained at the summer home of Dr Cabot June 27 at an al fresco luncheon with tennis music and water sports Dr Cabot was presented with a lamp as an expression of esteem by the visiting physicians

Valuable Library Service Open to Physicians—The Scientific Temperance Federation Boston has probably the largest library in America of scientific works and references dealing with alcohol To its services all physicians have easy and welcome access At the annual meeting of the federation held June 23, the secretary reported the result of three investigations of special interest made last year

1 Evidence from all sections of the country obtained from public health and law enforcement officials showed practically no increase in drug addicts traceable to prohibition of alcoholic liquors the apparent increase noted in a few cases being due to enforcement of antinarcotic laws

2 A symposium from well known physicians on present day medical practice in the use of alcohol as a preventive of or remedy for influenza and pneumonia showed that all the writers agreed that alcohol cannot be considered a preventive of these diseases and while many recognized that medical practice differs as to its administration a considerable number thought it of no value and said they did not use it in these diseases

3 A study of New York City statistics derived from weekly and monthly health reports as to adult mortality from Bright's disease liver cirrhosis and alcoholism and of early infant mortality comparing figures under prohibition with those of five to seven previous years The average annual number of deaths in 1919 and 1920 from Bright's disease and nephritis decreased 17 per cent from the average number in 1912 1918 and liver cirrhosis 49 per cent The total number of deaths from alcoholism decreased from 687 in 1916 to 98 in 1920 on the average in fourteen large cities it was 84 per cent lower in 1920 than in 1916 1917 The average annual mortality of infants under 1 year decreased in 1919 and 1920 15 per cent from the average for four preceding years for the same periods the average of deaths under one month decreased 13 per cent When the last six months of the successive years were compared as prohibition did not go into effect till July 1 1919 and there was a measles epidemic in the first half of 1920 the decrease in average total number of deaths under one month fell off 17 per cent from the average for the four preceding years The average infant mortality rate per thousand for 1915 1918 was 93 for 1919 and 1920 it was 84

MICHIGAN

Medical Meeting Held on Mine Rescue Car—The Houghton County Medical Society held its June meeting on Mine Rescue Car No 10 of the U S Bureau of Mines at Houghton Dr Cleve E Kindall, surgeon of the U S Bureau of Mines, spoke on 'First-Aid Training and Its Application to the Mining Industry" and Dr Nathan S MacDonald, Sidney Mines N S told "What the United States Is Doing for the Disabled Soldiers"

Prisoners' Tuberculosis Hospital Camp—It was decided at the meeting of physicians on duty in Michigan penal institutions held June 29 at Lansing that the state should establish a prisoners tuberculosis hospital camp for treatment of inmates The state commissioner of health was delegated to take up with the state administration, ways and means of building the hospital It is estimated that there are 100 or more state prisoners who are suffering from tuberculosis

Improper Diet Handicaps Children.—The traveling clinic of the state department of health, which in recent months has held clinics in twenty-five counties in both the upper and lower peninsulas and examined 5211 children, reports that 65 per cent were underweight According to a statement of the state health commissioner, undernourishment is not due to lack of food in the homes in the majority of cases, but rather to the fanciful appetites of the children acquired through lack of discipline exercised over their diets and to misunderstanding on the part of the parents as to what constitutes a proper diet In order that the child may develop properly and gain a normal resistance to disease Dr Olin urges parents to adopt a diet of milk, cereals fresh vegetables and fruits for their children, and compel them to eat at regular hours

MINNESOTA

Formation of Society for Medical Experiment—Twenty-three members of the faculty of the department of agriculture and school of medicine University of Minnesota, have recently organized a branch of the Society of Experimental Biology and Medicine

Personal—Dr William J Mayo has recently been elected an honorary member of the Medico-Chirurgical Society of Edinburgh The honorary membership of this society is limited to ten——Dr Harold E Robertson, formerly director of pathology and bacteriology in the Medical School of the University of Minnesota, has been transferred to the staff of the Mayo Foundation of the university as professor of pathology Dr Robertson has also become a member of the staff of the Mayo Clinic as head of the section on pathologic anatomy

Association of Resident and Ex-Resident Physicians of the Mayo Clinic—The third annual meeting of the association, which was organized before the war, was recently held at Rochester It was decided to publish the proceedings of the meetings in the form of transactions, and the first volume has recently appeared Meetings will be held annually in Rochester, the date of the next being June, 1922 The following officers have been elected for the coming year president, Dr Donald G Guthrie, Sayre, Pa , vice president, Dr George M Thomas, Minneapolis, secretary, Dr Harold L Foss, Danville, Pa , assistant secretary Dr Archibald H Logan, Rochester, and treasurer, Dr Arthur H Sanford, Rochester

MISSOURI

Municipal Hospital Farm—The board of aldermen, St Louis, passed a bill, June 24 appropriating $175,000 for the purchase of a large tract of land as the site for the proposed Municipal Hospital Farm A bond issue of $1,100,000 has been authorized by the voters to establish the farm When completed, the new institution will materially reduce the congestion in the city sanatorium and other hospitals maintained by the city

State University News—The board of curators of the state university has taken a definite stand in favor of establishing a four year course in medicine at the university The board will prepare a bill for presentation at the next session of the legislature in 1923 to authorize and appropriate money for the establishment of a state hospital at Columbia to be operated in conjunction with the medical school The Missouri State Medical Association at its last annual meeting at St Joseph appointed a special committee to cooperate with the university in drafting a bill for the creation of the state hospital and the establishment of a four-year medical course The members of this committee are Drs R M Funkhouser St Louis, chairman, W H Brewer, St James, F G Nifong, Columbia

Meeting of Health Officers—The second annual meeting of the Missouri Health Officers Association was held at Columbia, June 20 Some of the subjects discussed were "American Red Cross Cooperation" by Dr George H Jones, 'The Venereal Progress to Date," by Dr R L Russell, "Physical Defects and Communicable Diseases Among Children," by Dr C P Knight, 'The State General Hospitals," by Dr F G Nifong, "School of Medicine and Hospitals," by Dr Guy L Noyes Other phases of public health work were discussed particularly rural hygiene by Dr Cortez F Enloe, state health commissioner The luncheon at Boone Tavern given by the state university proved an enjoyable hour for informal talks Forty-eight members of the conference were present

New Nurses' Law Effective—The new nurses' law passed at the last session of the legislature became operative, June 20 It requires every person nursing for hire to obtain a license from the Nurse Examining Board and creates a new division of nursing called licensed attendants The preliminary educational requirements for registered nurses will be four years in a high school after July 1, 1928, but licensed attendants need have only an eighth grade certificate Annual reregistration is required so that the nursing resources of the state will be a matter of official record at all times Nurses who are now practicing and registered must reregister with the board before Jan 1, 1922, or take another examination In communities of 30,000 or less a nurse may practice for hire as a 'licensed attendant" without specified educational qualification, on the certificate of a licensed physician Such attendants cannot practice outside of their communities

Personal—Dr Cortez F Enloe has been appointed state health commissioner by the state board of health Dr Enloe is also secretary of the board——Dr Thomas Parran, Joplin, has been appointed to take charge of the work of the Bureau of Rural Sanitation Both of these offices were created by the last legislature——Dr and Mrs Ralph L Thompson, St Louis, will spend the summer in Europe visiting London and Paris They sailed on the *Aquitania,* July 5——Dr A L Furth, Cape Girardeau, chief of the resident staff of St. Louis City Hospital, completed his six-year course at the City Hospital, July 1, and has been succeeded by Dr Howard C Brascher as chief of the resident staff Thirty-six new interns became members of the staff, July 1, thirty juniors and five seniors having completed the one and two year courses——Dr G A Jordan, assistant health commissioner of St Louis, has been appointed hospital commissioner, to take effect July 15, to succeed Dr C H Shutt, resigned Dr Jordan has been connected with the health department of St Louis for thirty-four years, being assistant health commissioner for the past thirteen years

State Board of Control—Governor Hyde has appointed a new nonpartisan board of control consisting of six members three Republicans and three Democrats, to manage the eleemosynary institutions under a new law passed by the last general assembly It is expected that this readjustment of the management of the institutions will prevent political influence from affecting the appointment of superintendents and employees and make the tenure of medical officers depend on professional ability and adaptability to the work The new board displaces six dependent boards of five members each The institutions affected are State Hospital No 1 at Fulton, State Hospital No 2 at St Joseph, State Hospital No 3 at Nevada, State Hospital No 4 at Farmington, the State Sanatorium for Incipient Tuberculosis at Mount Vernon, and the Colony for the Feeble-Minded at Marshall The following were appointed on the board H D Evans of Bonne Terre, a banker and member of the Republican State Committee, W C Pierce of Maryville, banker, a member of the board of managers of State Hospital No 2, Charles Rendlin of Hannibal, Republicans, Frank Farlow of Webb City, formerly chairman of the Jasper County Democratic Committee R M White of Mexico, newspaper publisher and member of the board of managers of State Hospital No 1, and Arthur Fitzsimmons, a St Louis lawyer, Democrats Evans' and Farlow's terms expire June 19, 1924 Pierce's and White's terms expire June 19, 1923, and Rendlin's and Fitzsimmons' terms expire June 19, 1922

MONTANA

State Health Meeting—The third annual meeting of the Montana Public Health Association was held in Billings, July 11-12 The principal address was delivered by Dr Leslie L Lumsden, Assistant Surgeon-General of the U S Public Health Service Following the public health meeting the Montana Medical Association held its annual convention, July 13-14, giving physicians of the state an opportunity to attend both sessions

NEVADA

State Medical Meeting—The Nevada State Medical Association held its annual meeting June 23-24, at Elko under the presidency of Dr Ralph A Bowdle East Ely The following officers were elected for the ensuing year president, Dr R A Bowdle (reelected), vice presidents, Drs Maritt J Rand, Elko, John L Robinson, Reno, secretary-treasurer, Dr Sidney K Morrison, Reno

NEW YORK

Honors Graduates Who Served in War—A bronze tablet, in honor of 185 graduates of the institution who served in the World War, was dedicated during the recent commencement exercises at Syracuse University College of Medicine

Summer Course in Occupational Therapy—A summer course in curative occupations will be conducted at Byrdcliffe, Woodstock, Ulster County, from July 6 to August 12 by the New York Society of Occupational Therapy The class will be limited to 128 students

Violation of Narcotic Law—It is reported that Dr John C Russell, Saranac Lake, president of the village, and also president of the board of education, has pleaded guilty to violation of the Harrison Narcotic Law, and was sentenced to pay a fine of $100, or $20 on each count

Wins Damage Suit for Diabetes—A jury before Supreme Court Justice O Malley upheld the claim of Mrs Rose Cohen that as the result of a collision between a truck of the Bacon Coal Company and a Gates Avenue car in Brooklyn, in 1919 she was injured in such a manner that diabetes developed and she became an invalid and lost 70 pounds The jury gave a verdict of $12,000 against the coal company During the proceedings Sir William Osler was quoted to prove that diabetes could be caused by shock

Personal—Dr Pliny B Fiske Byron, sustained injuries about the body, and possibly internal injuries, when his automobile ran into a ditch when attempting to pass an auto truck causing Dr Fiske to be thrown out of the car——Col Homer Folks has been reappointed by Governor Miller to succeed himself as member of the Public Health Council for the term of office which is six years——Surg Samuel B Grubb of the U S Public Health Service has been detailed as chief quarantine officer of the port of New York succeeding Surg Leland B Cofer, who has been relieved on account of ill health

Plattsburg Camp Plans Health Follow-Up—According to an announcement by Capt Arthur F Cosby, executive secretary the Military Training Camps Association, a new health examination plan will be inaugurated at the Plattsburg camps this summer, providing for a complete physical examination of each man on arrival at the camp with notations of his physical defects On his return home he will receive a report of his physical condition and will be advised what course of treatment to follow to eliminate any disabilities It is believed that by means of a follow-up system after the men return from camp permanent results will be accomplished in improving the health of the men

New York City

Personal—Dr Thomas W Salmon has been appointed professor of psychiatry at the Columbia University College of Physicians and Surgeons and has resigned from the staff of the Rockefeller Foundation Dr Salmon will continue to serve as medical director of the National Committee for Mental Hygiene

NORTH CAROLINA

Library Given to University—The medical library of fifty-two volumes belonging to Capt John Edwin Ray, Jr, who was wounded in the battle of Bellicourt, and died in October 1918 has been given by his mother to the library of the University of North Carolina

Change of Rules Relating to Election of Officers—The North Carolina Medical Society has adopted resolutions for the naming of new officers by the entire society instead of by the nominating committee as heretofore According to the custom of the society changes in the by-laws must wait one year before final action is taken

OHIO

Use of Reformatory Boys for Nursing—The state legislature has appropriated $25 000 for the construction at the Sandusky Soldier's Home of a model home for Mansfield Reformatory boys who are used as nurses at the Sandusky Hospital Ohio is said to be the only state where prisoners are used as nurses

Personal—Dr Harry H Snively Columbus has been appointed by the governor as director of the department of health Under the reorganization plan which went into effect July 1, the department of health took over from the secretary of state the functions of the state inspector of plumbing and the state registrar of vital statistics

OREGON

Memorial to Dr Yenny—At a recent meeting of the board of regents of the University of Oregon it was decided to place contracts immediately for the construction of the new medical school building in Portland It was also decided to name the medical school building after the late Dr Robert C Yenny

PENNSYLVANIA

Chiropractor Fined—A news item states that June 13, W H Gittings chiropractor of Bethlehem, was found guilty of practicing medicine without a license and fined $1 and costs

Doctors Lose Licenses—It is reported that at a meeting early in June the Bureau of Medical Education and Licensure revoked the licenses of Drs W H Theal and John G Dougherty of Philadelphia, and Frank L Seely of Jersey Shore following investigations of charges of violation of regulations of the medical practice law

Personal—Dr Hobart Amory Hare professor of materia medica in Jefferson Medical College, has received the degree of doctor of laws University of Pennsylvania——Dr John A Kolmer, professor of pathology and bacteriology in the graduate school of medicine of the University of Pennsylvania, and director of the pathologic laboratories of the Dermatological Research Institute, has received the degree of doctor of science from Villanova College——Dr Jessie R Peterson has tendered her resignation as resident physician of the department for women of the State Hospital for the Insane at Norristown

Philadelphia

First Sane Fourth—The city passed the first sane fourth in its history There were no long lists of fireworks victims There were no children lying dead mute testimony to the possibilities of the "harmless" sparkler No children were made armless because they did not know the cannon cracker was lighted Only one injury was reported A small boy was struck by a bullet from a revolver The man who fired the revolver wound up in a cell He did not know it was loaded and the casualty, anyhow was not due to fireworks

Health Board Asks for School Nurses—An increased corps of school nurses will be urged on the board of education according to the department of public health, of which Dr C Lincoln Furbush is director At present 65,000 children in the elementary schools and 8,000 in the elementary continuation schools Girls' Trade School, senior high schools and junior high schools are without the service of nurses Furthermore those who are now on duty are overtaxed because of the large number of children assigned to their care

SOUTH CAROLINA

Campaign of Health in Schools—A commission has been appointed by Dr Harry L Shaw, Sumter, president of the South Carolina Medical Association, from the state association to investigate the sanitary and hygienic conditions of the public schools and formulate plans for their improvement

TEXAS

New Army Hospital at El Paso—The William Beaumont General Hospital at El Paso with a 400-bed capacity was opened June 15, with 230 patients and with a medical army personnel of twelve officers, twenty-seven nurses and 173 enlisted men

WASHINGTON

State Examining Board—Dr Charles C Tiffin Seattle, has been appointed by the governor as one of the members of the state examining board provided by the administrative code Other members of the new board are Dr John B McNerthney Tacoma and Dr John W Mowell, Olympia

CANADA

Personal—Dr Roscoe Graham Toronto, has been west delivering the address in surgery before the Saskatchewan Medical Association——Dr Clarence L Starr Toronto surgeon in chief to the Hospital for Sick Children has been appointed professor of surgery in the University of Toronto——Dr John J Fraser, formerly of Walkerton Ont at present practicing in Toronto, has been appointed district medical officer of health in the Fort William-Port Arthur district succeeding Dr Robert E Wodehouse, who is now secretary of the Canadian Association for the Prevention of Tuberculosis——Dr Edward W Montgomery, Winnipeg has been elected president of the Canadian Medical Association closing its fifty-second annual meeting at Halifax on July 9 Winnipeg is to be the place of meeting in 1922——Dr John Fenton Argue Ottawa has been elected president of the Ontario Medical Council

GENERAL

Officers of Medical Women's Association—At the annual meeting of the Medical Women's National Association held recently in Boston Dr Mary Elizabeth Bass, New Orleans was elected president and Dr Grace Kimball Vassar College Poughkeepsie N Y president-elect Madame Marie Curie was made an honorary member of the association

Dinner in Honor of Rockefeller Foundation Representatives—During a colonial health conference, the British government gave a dinner June 13, at the Carleton Hotel London in honor of George E Vincent, Wickliffe Rose, and Vincent G Heiser, representatives of the Rockefeller Foundation The Hon Winston Churchill secretary for the colonies presided

Personal—Dr Valeria Hopkins Parker, Hartford Conn has been appointed executive secretary of the United States Interdepartmental Social Hygiene Board, to succeed Dr Thomas A Storey, Washington, D C., who, because of the

pressure of other duties, was not a candidate for reappointment The board has charge of the moral protection of communities near the military and naval bases

International Congress of Military Medicine and Surgery—In response to an invitation extended to various allied powers requesting that delegates be sent from the armies and navies to join in the discussion of the lessons of the war in medicine and surgery, the United States government has forwarded orders to Commander Bainbridge to proceed to Belgium and attend the congress as the representative of the Medical Corps of the U S Navy The date of the congress is July 15-20

Amendment to Sheppard Bill Introduced—An amendment to the Sheppard bill introduced by Senator Moses of New Hampshire would transfer the enforcement of this proposed act from the Children's Bureau of the Department of Labor to the U S Public Health Service of the Department of the Treasury The contention of the senator is that the U S Public Health Service with its large and trained corps of physicians and surgeons would be better able to administer the measure than the Children's Bureau The Sheppard bill is now before the Senate and is expected to be acted upon in the near future

Senate Committee Reports Favorably New Dry Bill—The Senate Committee on the Judiciary has favorably reported to the Senate the antibeer bill approved by the House of Representatives the later part of June No changes were made in the provisions preventing a physician from prescribing beer as a medicine Senator Sterling of South Dakota in filing the report declared that he expected to insist upon an early vote by the Senate In a statement he said

> The ruling of the former Attorney General allowing beer to be prescribed as medicine makes a farce of the prohibition law It puts no limit on the amount and a doctor can prescribe it by the case or the keg The bill as reported makes little change in the bill as approved by the House except for some slight modifications in the language dealing with the formulas for proprietary medicines and in the importation of certain wines needed for medicines

Garden City Sanatorium.—Dr Andre Baillon, laureate of the faculty of medicine, Paris, and president of the Franco-American Committee to Fight Tuberculosis, has come to America to complete the organization of the American membership of the committee and to form subcommittees in cities outside New York, with the object of completing the projected Garden City Sanatorium, in Provence France The sanatorium will be designed to take care of French soldiers who became tuberculous as the results of war service, and for the children of devastated regions in north France who suffered from exposure during the German occupation The site of the sanatorium has been selected in the Esterel Mountains, overlooking the Mediterranean One hundred children now under the care of the American Committee for the Relief of the Devastated Regions of France will be transferred to the sanatorium as soon as it is finished

Bequests and Donations—The following bequests and donations have recently been announced

National Committee for Mental Hygiene $100 000 Society for Improving the Condition of the Poor New York $200 000 Henry Street Settlement and New York Hospital each $50 000 Adirondack Cottage Sanatorium $25 000 by the will of Mrs Elizabeth Milbank Anderson

Saratoga Hospital Saratoga Springs N Y $100 000 New York Society for Relief of Ruptured and Crippled $10 000 New York Eye and Ear Infirmary $10 000 Brooklyn Home for Consumptives $5 000 by the will of Mrs Ellen D V Hazelton Westfield Mass

Union Memorial Hospital Baltimore $50 000 Church Home and Infirmary Baltimore $60 000 by the will of Mrs Marie Conrad Lehr wife of Dr Louis C Lehr Washington D C

The Roosevelt Hospital New York for a free memorial bed $36 250 to St Luke s Hospital New York for a free bed, $35 000 by the will of Henry R C Watson of Brandon Vt

St Vincent s Home and Maternity Hospital Philadelphia, $1 000 by the will of Peter J Hallahan

St Joseph s Hospital, Philadelphia $250 by the will of Joseph Verner

Provisional Health Committee—Official announcement of the membership of the Provisional Health Committee has been received It is made up of twelve experts selected by the council as private individuals and with no regard to anything but their personal ability and standing To these are added representatives of the International Labor Office and the League of Red Cross Societies There is at present no representative from the United States The health organization of the league, as finally developed, should have the following objects

> To act as a connecting link between the health authorities of all countries to act as a clearing house for information concerning everything that constitutes a menace to public health to form a sort of general staff when an epidemic threatens to overrun a number of countries to coordinate the efforts of the Red Cross Societies in their work on behalf of 'improvement of health prevention of disease and the mitigation of suffering throughout the world as prescribed by Article 25 of the Covenant to cooperate with the International Labor Office for 'the protection of the worker against sickness disease and injury arising out of his employment' , to advise voluntary organizations requesting assistance and finally to establish health missions when asked to do so by the League of Nations or by any country belonging to the league

Tri-State Meeting at Portland—The triennial joint meeting of the medical associations of Oregon, Washington and Idaho was held at Portland Oregon, June 30 to July 2 The registration was nearly 700, representing over one-third the combined membership of the three associations The meetings were held in the Multnomah Hotel In addition to papers and demonstrations by members of the three associations the following visitors appeared on the program Drs William F Braasch, Rochester, Minn , Robert E Farr, Minneapolis, Alan Brown of the University of Toronto, R E Coleman of the University of Vancouver, British Columbia, Dean Lewis, Chicago, Alfred Strauss, Chicago, G V I Brown Milwaukee, V P Blair, St Louis, Frank Hinman San Francisco, Frederick R Green, Chicago, Judge Harold M Stephens of Salt Lake City, representing the American College of Surgeons and Mr Celestine J Sullivan, executive secretary of the California League for the Conservation of Public Health The session was held under the presidency of Dr Joseph A Pettit of Portland, who tendered the members and guests a reception at his residence on Thursday evening On Friday evening the annual banquet and ball was held at the Waverly Country Club, and on Saturday afternoon the entire body was taken for an extended automobile trip along the Columbia Highway, followed by a barbecue and picnic dinner at the Automobile Club Grounds

American Legion Promulgates Resolution on Hospitalization—The following resolution was passed unanimously at a meeting of the National Committee on Hospitalization and Vocational Training of the American Legion, held July 6, 1921 at Washington, D C As directed by the resolution copies are to be sent to the 10,042 posts of the American Legion throughout the United States and the resolution will be published in the *American Legion Weekly,* which has a weekly circulation of more than 700,000 copies among ex service men and women

> This committee after duly hearing a report from the Consultants of the Secretary of the Treasury desires to record its appreciation of the progress made and the work accomplished by the Secretary of the Treasury in allocating the money recently appropriated by the Congress for the expansion of existing federal hospitals for ex service men This committee approves highly of the method adopted by the secretary of appointing consultants chosen from the specialists of the country to advise on the location and type of hospitals to be erected under the aforesaid appropriation and would urge upon the Secretary of the Treasury that he request the consultants to recommend to him such additional provision as in their judgment after further careful study may seem to be necessary to complete the hospital program for ex service men and furthermore the National Adjutant is requested to forward a copy of this resolution to every post

The consultants acting with the Secretary of the Treasury are Drs William C White, Frank Billings, George H Kirby and Chancellor J G Bowman

LATIN AMERICA

Appointments to the Medical Faculty of Bogota.—According to the *Gaceta Medica* to fill the vacancies left by the death of Dr Fajardo Vega and of Dr J del C Cardenas Dr G Vergara Rey has been appointed to the chair of tropical medicine, Dr Jenaro Rico to the chair of medical physiotherapy, and Dr J M Montoya, professor of children's diseases, was appointed on the board of managers

Inauguration of Laboratory at Ciudad Bolívar—The *Gaceta Medica de Ciudad Bolivar* gives the addresses made by the director, Dr F R. Paez and others at the inauguration recently of the bacteriology and parasitology laboratory of the state of Bolivar, installed in the Hospital Ruiz The third national medical congress is to convene in that city, July 24 and the principal topic appointed for discussion is the medical geography of Venezuela

Campaign Against the Hookworm in Paraguay—The vice consul reports from Asuncion that during a campaign against hookworm last summer by the department of health it was discovered that about 83 per cent of the suburban population of the city of Asuncion and Villarrica were infected Twenty per cent of all the deaths in Paraguay are ascribed to this disease The total population of Paraguay is estimated at 1,000 000, of which 90,000 reside in Asuncion and 34,000 in Villarrica

FOREIGN

The Goteborg Plan for Dispensaries—A medical writer in the *Lyon Medical* describing his impressions from a trip through Sweden, praises the way the free dispensaries are managed at Goteborg Each applicant presents a certificate of indigence or pays 2 crowns for his consultation

Zambaco Prizes—The Societe Française de Dermatologie et de Syphiligraphie recently awarded the two Zambaco prizes to Dr Fouquet for his work on reinfections and superinfections in syphilis and to Dr Montlaur for his study of eczematoid lesions in interdigital spaces and folds

Prize Offered to French Inventor with Three Children—The Direction des Recherches Scientifiques et Industrielles has recently been endowed with a fund the income of which is to provide two annual prizes totaling 12 500 francs, to be awarded for some invention made by the father of at least three children

Centennial of Scientific Society—The Niederrheinische Gesellschaft fur Natur- und Heilkunde recently celebrated at Bonn the centennial of its foundation The main address in the medical section was by Krause who reviewed the history of the medical sciences as presented in the society meetings A number of honorary members were elected, including Professor Forssel of Stockholm

The Welsh National School of Medicine—For about thirty years the Cardiff School of Medicine at Cardiff Wales has offered the work of the first three years of the British five-year medical course its students going elsewhere to obtain their clinical training It is now planned to establish a complete curriculum which will be offered beginning next October The medical school is to continue as the Faculty of Medicine of the University of Wales

Personal—Dr Belzer of Bordeaux has been awarded the Gratitude of Belgium medal for services rendered to Belgian refugees during the war——The pupils and friends of Dr Siredey have organized a committee to collect funds to present him with a medal on the occasion of his retirement from active work in the Paris hospitals A bronze replica of the medal will be given each one who subscribes 50 francs Address G Doin Librairie Doin Paris——Prof W Uhthoff retires this year from the chair of ophthalmology at Breslau having reached the age limit

Tribute to Maraghano—The Italian internists hold their annual meeting this year in October, and it is proposed to celebrate on that occasion the fortieth anniversary of the connection of Professor and Senator E Maraghano with the teaching force of the University of Genoa The meeting and the anniversary celebration are to be held at Naples, where Maraghano obtained his degree in medicine He was the guest of the University of Pennsylvania in 1904 for the Phipps lecture He is one of the two directors of the *Riforma Medica* and has long been one of the leaders in pathology and internal medicine in Italy

Gynecology and Obstetrics Congress—The Second Congress of the Association of Gynecologists and Obstetricians of French-speaking countries is to convene at Paris Sept 29 to Oct 1, 1921 The subjects appointed for discussion are disturbance in thyroid functioning in connection with gestation, medical and social protection for the pregnant, indications for abdominal hysterotomy in the course of labor with normal pelvis, hysterectomy in acute puerperal infection and radium therapy in cases of uterine fibromas (Faure of Paris), in cancer of the uterus (Hartman of Paris), in metrorrhagia under other conditions (Koenig of Geneva) Membership in any French-speaking gynecology or obstetrics society entitles to membership in the congress The general secretary is Dr Brindeau rue de Grenelle 71 Paris

Guests at Dedication of Peking Union Medical College—At the dedication of the Peking Union Medical College to take place in Peking September 15-22, as announced in THE JOURNAL, July 12, the following members of the board of trustees of the Rockefeller Foundation will be present George E Vincent, president Paul Monroe chairman of the board of trustees John D Rockefeller, Jr Martin A Ryerson Chicago, William H Welch, Johns Hopkins University J Oriol Armitage, of the Society of the Propagation of the Gospel in Foreign Parts England, James L Barton, Boston, secretary of the American Board of Commissioners for Foreign Missions, F H Hawkins London Missionary Society England, and J Christie Reid of the Medical Missionary Association of London, England The following physicians have also accepted invitations and will attend the International Medical Conference to take place at that time Professor Tuffier Paris, Drs A B Macallum McGill University, Montreal Canada, Sir William Smyly, Dublin, R T Leiper London School of Tropical Medicine, Francis W Peabody Harvard University Medical School, George de Schweinitz University of Pennsylvania, Florence Sabin, Johns Hopkins University S S Goldwater, Mount Sinai Hospital New York, Thomas Cochrane, London, J G Clark University of Pennsylvania Victor G Heiser, International Health Board, and Richard M Pearce, Rockefeller Foundation

Gratitude Expressed by German Pediatricians—Our German exchanges publish an official notice drawn up at the annual meeting of the Deutsche Gesellschaft für Kinderheilkunde held at Jena in May, the first since the war It states that the society feels it incumbent to express its profoundest gratitude to all those "who during the war and especially since the close of the war have tried to alleviate distress among children in Germany This gratitude is to all who helped either in Germany or elsewhere Beside the German organizations especial thanks are due in particular to the foreign relief on a large scale, especially the children's aid mission of the Quakers of America who in collaboration with Herbert Hoover's American Relief Administration and European Children Funds have been supplying food since February 1920 for children of all ages up to 18 and for expectant and nursing mothers, also to the Quaker society of England for their care for refugees and other services to the Salvation Army for distributing free milk to the child saving work done by the organizations for the purpose in Denmark Norway, Holland, Sweden, Switzerland and Finland sending donations and receiving German children into their homes to the international organization responsible for the 'Save the Children Fund' and finally to the committees formed in German colonies in North America, Central and South America, Dutch East Indies, China South Africa Brazil Argentina and other foreign lands for their donations of money and in particular their gifts of milch cows Our gratitude is profound for this assistance to our children and also our appreciation of the spirit of sympathy and helpfulness and reciprocal confidence which is manifest in all these efforts Only the strengthening of this spirit can bring true peace to peoples" The communication is signed by the president and secretary of the society, Prof E Peiper of Greifswald and Prof H Brüning of Rostock.

Deaths in Other Countries

Dr **Carlo Moreschi**, one of the leading physicians of Italy recently appointed professor of clinical medicine at Messina He succumbed to hemorrhagic smallpox at Pavia——Dr **F G Thomson** of Rosario, Argentina, a leader in the organized prophylaxis of venereal disease and of tuberculosis and professor in the Escuela Industrial de la Nacion——Dr **John Matthew Fortesque-Brickdale**, Bristol, England, member of editorial staff of the *Bristol Medico-Chirurgical Journal* and author of works on chemistry and therapeutic actions of drugs, died recently, aged 51——Dr **William A Bell**, former practitioner of St George's Hospital London became associated with General Palmer Colorado and was interested in the founding of the Denver and Rio Grande Railroad system, of which company he was for many years vice president, associated in the founding and development of Colorado Springs, Manitou and other Colorado towns and maintained a residence, 'Brairhurst at Manitou author of "New Tracks in North America", died recently at his home in England, aged 80——Dr **E Lauwers**, chief of public health service in western Belgium and a leading surgeon member of several scientific societies at home and abroad aged 63——Dr **H Albers-Schonberg**, professor of roentgenology at Hamburg He was one of the first to appreciate the importance of the roentgen rays for medicine and was the first professor of roentgenology to be appointed, and has published numerous works on this specialty His prolonged work with the rays entailed severe injury One arm had to be amputated and he has finally succumbed to malignant degeneration of his roentgen burns——Dr **H Brock** of Berlin founder of the Balneologic Society, aged 89——Dr **A Fiedler** of Leipzig, aged 86——Dr **L Knorr** of Jena who discovered the pyrazolon compounds including antipyrin aged 62——Dr **A. Lerch** of Vienna——Dr **R Penzini, Jr**, of Callao and Dr **M Hernández** of Maracaibo both in Venezuela——Dr **J Deutsch** of Munich said to be the first to apply roentgen treatment to uterine fibromas——Dr **A Würzburg**, long statistician to the national public health service in Germany——Dr **J Fabre**, professor of obstetrics at the University of Lyons, aged 55

Government Services

Navy Closes Yokohama Hospitals

The Surgeon-General of the Navy has ordered the U S Naval Hospital at Yokohama, Japan, closed in the interest of economy Lack of demand for hospital facilities in Japan has been falling off in recent years and Navy Department decided that there was no occasion for a continuation of this institution Capt Raymond Spear, U S Navy Medical Corps who has been in command, will be transferred to other duties with his assistants

Senate Committee Reports Favorably Reserve Retirement Bill

The Senate Military Affairs Committee has reported favorably to the Senate the Bursum bill calling for the retirement of disabled emergency and reserve officers on the same financial status as the officers of the regular military establishment Quite a number of emergency medical officers wounded and disabled as a result of their service in the World War will be benefited should the measure pass both houses of Congress and become a law Senator Bursum introduced the proposed act on the claim that the country was not living up to the provisions of the Army reorganization and the draft act that stated that all officers and enlisted men would be placed on the same footing as regards pensions after their entrance into the Army

Distinguished Service Medal to Colonel Reynolds and Lieutenant Hull

President Harding has awarded the distinguished service medal to Col Frederick P Reynolds, Medical Corps, U S Army, for meritorious services as a surgeon of the advanced section, service of supply, American Expeditionary Forces He is from Elmira, N Y For extraordinary heroism in action near Cormicy, France, May 27, 1918, Lieut Alson J *Hull*, U S Medical Corps, has also been awarded the distinguished service cross He is from Troy, N Y, and was attached to the Fourth South Staffords, British army, in action

Flight Surgeons

Seven students have recently graduated and received the rating of flight surgeons from the School of Flight Surgeons, at the American Army Medical Research Laboratory, Mitchel Field, Long Island, N Y

Changes in Naval Medical Corps

Capt James S Taylor, M C U S Navy, in charge of the division of Naval medical publications, and editor of the *Naval Medical Bulletin* was detached from the Bureau of Medicine and Surgery, July 15, and assigned to duty as medical officer of the Navy Yard, Philadelphia He will be relieved by Capt Frank L Pleadwell, recently fleet surgeon, on the staff of Admiral Wilson In addition to his work on the Naval medical publications, Captain Pleadwell will have charge also of the educational activities of the Medical Corps

Public Health Institute

The proposed public health institute which the U S Public Health Service contemplated holding in Washington, D C, during the fall of 1921, has been indefinitely postponed This action has been decided on after several conferences between officers of the service and officers of the American Public Health Association

Public Health Service Takes Over Navy Hospital

The U S Public Health Service has taken over the management of the Navy Camp and Hospital at Gulfport, Miss It will be used for the care and treatment of shell shock soldier patients Owing to some technical difficulties now in progress of clearing up, no lease has yet been signed for the property Surgeon G A Kempf of the U S Public Health Service has taken charge of the hospital with Passed Assistant Surgeon V L Mahoney as executive officer

Foreign Letters

PARIS

(From Our Regular Correspondent)

June 10 1921

International Conference on Epizootic Diseases

Last October, following the appearance of cattle plague in Belgium, the Comite consultatif des epizooties of France requested at the suggestion of its president, that the various governments be invited to appoint delegates to a conference for the purpose of deciding on the proper measures to be taken to prevent, or at least to check the progress of, epizootic diseases The minister of agriculture, recognizing the value of the suggestion, submitted it to the ministerial council, by which corresponding action was taken Invitations were promptly sent to foreign governments with the result that they readily entered into the plan Forty-two countries, colonies or dominions, besides France, expressed their approval and were represented at the conference In 1871, exceptional conditions analogous to those of today were the occasion for a conference of like nature The Austrian government at that time took the initiative with the view to establishing uniform rules concerning the prevention of cattle plague, which was spreading over central Europe, Belgium and a large part of France The Vienna conference worked out a set of regulations of international scope, but, owing to the disappearance of the disease, it was not published However the principles therein set forth have served as a basis for all modern legislation on the subject The conference of 1921 was different from that of 1871 both on account of the large number of governments that took part in it and thus gave it an almost international character, and also because its program was not limited to the adoption of efficacious measures for combating the cattle plague The French delegation, which had been instructed by the French government to work out the program of the conference, thought it advisable to include the study of methods that might serve to prevent the spread of other epizootic diseases After a general discussion, during the course of which the delegates of the different governments made known the conditions obtaining in their respective countries, committees were appointed, with instructions to prepare and submit conclusions, which were approved by the conference and presented to the various governments for ratification Some of the conclusions lay down general principles, while others take the form of resolutions It appeared that, while complete unanimity was feasible in certain matters, in other points at issue it was preferable to allow a certain amount of freedom to the individual governments The most important thing is that each government be promptly notified of the appearance of any epizootic disease in a neighboring country, so that it may take the necessary precautionary measures for its own protection It is equally important that the information on sanitary topics shall be published by the various countries in accordance with uniform rules and shall be given out as frequently as possible Formal resolutions relative to this subject were adopted The conference recognized also the desirability of a common bond of union being established between the scientists throughout the world whose double aim it is to discover preventive and curative measures whereby the spread of epizootic diseases may be effectively opposed Thus every scientist can keep himself informed in regard to the work undertaken and the results secured in other laboratories He will be able to experiment under conditions often just a trifle different from those under which the experiment was first done Thus he can control the value and efficiency of work undertaken and results obtained else

where The publication of the results (though they be only partial or even negative) of various experiments will prevent the loss of time and energy that would arise from performing experiments which have already been made Investigations should be confined to researches made with a view to discovering curative methods They must also include, from the standpoint of prophylaxis, everything pertaining to the spread of the disease, bacteria carriers, the amount of resistance shown by certain species or certain individual animals and the danger of contamination that may lie in the meat and other products of certain animals, even though they may appear harmless The conference thus outlined an important program of scientific research, in the carrying out of which the scientists of the world are requested to coordinate their efforts The realization of this program requires the publication of an international sanitary statistical bulletin and the creation of a bureau that shall serve as a clearing house for all kinds of information It was also decided to establish a permanent bureau against epizootic diseases and having a similar mission to the bureau which was created about fifteen years ago for the protection of human health and which bears the name of the International Bureau of Public Health The object of this bureau, as expressed by the terms of the establishing resolution, is to collect and bring to the knowledge of governments and their health departments, facts and documents of general interest concerning the spread of epizootic diseases and the means employed to combat them, to promote and to coordinate all researches and experiments connected with the pathology and prophylaxis of infectious diseases in animals for the accomplishment of which an appeal must be made to international collaboration, to work out forms of international agreements relative to sanitary control of animals, and to place at the disposal of the signatory governments the best means of controlling the execution of such agreements The conference requested that the headquarters of this bureau be permanently located at Paris, where each year the delegates of the various governments will convene for the purpose of examining into new problems which may arise or into modifications which may be required in international legislation, the foundations of which it has thus laid

LONDON

(From Our Regular Correspondent)

June 12, 1921

The Prevention of Venereal Diseases The Government Policy

As shown in previous letters, ever since the war the prevention of venereal diseases has been a burning question in this country For some time the government has been considering the modification of its policy, and the result is a circular issued by the Ministry of Health to the local health authorities (county councils) Up to the present the government policy has been based on the recommendations of the Royal Commission on Venereal Diseases which, in the main, are gratuitous treatment at hospitals and other institutions in all parts of the country and a campaign of publicity and education as to the dangers and the necessity for early treatment. In a few areas, ablution or disinfecting centers have been instituted as an experiment War experience of the different armies has given rise to the question whether in civil life some further measures should be adopted, and this was considered by a committee appointed by the minister of health This committee came to the conclusion that, although certain drugs properly and skilfully applied are efficacious in prevention, the most carefully organized system for the supply of these drugs in packets and the instruction of men in their use did not produce such reduction in incidence as to warrant its recommendation to the government It was, however, found that when preventive treatment by a skilled attendant was provided after exposure, the results were better than when the same measures were taken by the individual, even after the most careful instruction Unofficially also the question has been under the consideration by a special committee of the National Birth Rate Commission The government has given careful consideration to the question on which these two committees are not agreed—the question of self-disinfection—but they are in general agreement that (1) abstention from promiscuous intercourse is the best way to avoid risk of disease, and a steady and continuous policy of public enlightenment is essential, (2) disinfection immediately after exposure is effective only to the extent to which it can be thoroughly and intelligently applied They also find that medical opinion is divided as to the efficacy of disinfection for the civil population and in particular as to (*a*) whether it is practicable to give such instruction to the population generally as will insure that disinfectants are thoroughly and skilfully applied, (*b*) whether propaganda as to the efficacy of disinfectants would not lead to persons risking infection who would otherwise avoid it, and (*c*) whether the disinfectants will not be used in some cases for treatment with the result that proper treatment will be delayed The government is thus confronted with this difference of opinion on the medical side as to self-disinfection while on the moral and social side weighty objections are advanced against it It has therefore decided that it cannot give it official support It considers that this decision emphasizes the importance of continuing and extending public instruction and enlightenment as to the danger of promiscuous sexual intercourse It recommends the widespread use of leaflets warning the public of the prevalence of venereal disease, pointing out that it is the duty of all who have incurred the risk to cleanse themselves thoroughly and immediately, and if the slightest symptoms occur to seek medical treatment promptly The arguments against official advocacy of self-disinfection are not considered to apply to the provision of ablution centers under medical supervision, but experience is not yet sufficient to decide whether such centers should be established in large towns

The Decrease of Typhoid Fever

Dr W H Hamer, health officer for London, considers that among the factors operating in producing the great fall in typhoid prevalence of the last twenty years, amelioration of conditions obtaining in connection with the harvesting of fish and shellfish from inshore waters have played a not inconsiderable part The oyster scare of the nineties diminished consumption of oysters, and led to improvements in cultivation and storage For many years, however, cockles and mussels derived from grossly polluted sources continued to be supplied to the poorer population of the large towns, and to be consumed locally at seaside resorts The practical disappearance of the Tees oyster and mussel fishery was accompanied by a remarkable fall in the greatly excessive amount of typhoid fever in Durham Dr Hamer quotes Professor Gardiner for the statement that so long as the oyster shells remain closed and do not lose their shell water, the oysters remain good for human consumption, and cannot be infected on their journey to the customer Noting Gardiner's description of the process of teaching the oyster to keep its mouth shut," Dr Hamer also recalls his optimistic view that "cases of typhoid infection from oyster beds are now almost nonexistent"

As regards fish, three outbreaks occurred in London in September 1900, which were attributed to this source, and it was found that small fish which were used ungutted were specially dangerous Dr Hamer thinks that the need for systematic inspection with a view to destruction of fish and shellfish unfit for consumption the desirability of protecting

the nurseries of the small fish, of prohibiting the sale of ungutted flatfish, and of coping with the problem of the unsatisfactory shellfish beds calls for attention if the position as regards preventing spread of typhoid is to be not merely maintained, but still further improved on, until at length the goal is attained—the entire abolition of the disease

Eugenics

At the annual meeting of the Eugenics Education Society, Major Leonard Darwin, in his presidential address, said that eugenics had been called a dismal science, but it should be described as an untried policy Both in genetics and eugenics further advances in knowledge were much needed, and many inquiries were now held up only for want of funds The wisdom of attending to breed in the case of cattle and dogs was universally admitted Experience in the stockyard enabled us better to understand the laws of natural inheritance, but reliance on those laws did not imply that the methods of the animal breeder should be introduced into human society Eugenists advocated nothing contrary to the highest religious ideals They had been accused of wishing to abolish love as a guide to conduct but that was false They wished to purify it of all harmful influences Love was largely aroused by advantageous moral and mental qualities, and it found this the firmest foundation on which to base a eugenic policy By promoting right ways of regarding sexual problems, the moralist was often, unknown to himself, striving to improve the racial qualities of the future generations We should encourage the discussion of all relevant reforms, but should be cautious in recommending governmental interference If action was too bold progress would be slow, for the wrong road would often be taken If discussion was not bold progress would also be slow, for a nation could not grope its way quickly in the darkness of ignorance As to sterilization, for example, by open discussion true conclusions would be most likely to be reached

PEKING, CHINA

(From Our Regular Correspondent)

May 15, 1921

Plague Situation

Since my letters on the plague and famine in China, there have been a few new developments Following the rather surprising outbreak of plague on the borderline between the two provinces of Shantung and Chihli, several small epidemics started in neighboring places and for a time caused great concern However they were promptly placed under the control of the medical authorities and have gradually died out, but not without the sacrifice of one of the Chinese physicians, a recent graduate of the old Peking Union Medical College The plague in Manchuria is gradually disappearing without developing alarming proportions thanks to the intensive preventive measures used against it by the North Manchuria Plague Prevention Service under Dr Wu Lien Teh The famine distress has been further augmented by the lack of rain during March and the first part of April In many places the winter wheat has been destroyed This grain, normally maturing in June, was counted on to break the back of the famine. Although later crops of other foods will take the place of winter wheat, the delay will necessitate the support for a much longer period, of those whom the Famine Relief Committee has elected to carry through until harvest time

Clubs Formed of Faculty of Peking Union College

The faculty of the Peking Union Medical College has organized the Journal Club, with Dr Oswald Robertson of the department of medicine as its president and Dr Carl TenBroeck of the department of pathology as its secretary Meetings are held biweekly and reviews of current articles and monographs of general interest are discussed

Another organization of the staff is the Faculty Medical Society Dr Jocelyn Smyly of the department of medicine is its president, and Dr Henry Meleney of the department of pathology is its secretary This society also meets biweekly, alternating with the Journal Club At some of the meetings the progress or result of the researches being conducted by the members of the staff is reported At others, clinical material is presented Once a month the Peking branch of the China Medical Missionary Association meets conjointly with the Faculty Medical Society and takes part in the program.

Streptococcic Epidemic

The winter has been a severe one from the point of view of infectious diseases One of the most important phases of this has been an epidemic of hemolytic streptococcus sore throat, with middle ear disease and mastoiditis

Nervous and Mental Diseases

Cerebrospinal syphilis and its degenerative sequelae are conspicuous both in frequency and in gravity Tabes dorsalis and general paresis appear to be at least as frequent here as in American clinics Primary tract degenerations and the muscular dystrophies are evidently not infrequent among the Chinese The infrequency thus far of trigeminal and other severe neuralgias in this service is surprising, since pain is the symptom which brings the Chinese most promptly to the western physician For the indolent degenerative diseases they are more likely to content themselves with the native practitioner, at least until resulting motor weakness stirs them to overcome their inborn conservatism Many of the cases of epidemic encephalitis (lethargic) have been of the myoclonic type Mental defectives of all grades are frequently encountered Dementia praecox has been the commonest of the psychoses Psychoneuroses are frequent among the Chinese A violent fit of anger is a cause commonly assigned by the patient or the family for the ensuing train of symptoms

BUDAPEST

(From Our Regular Correspondent)

May 19, 1921

Influence of Alcoholism of the Mother on the Offspring

At the recent meeting of the medical society, Dr Darvas said that the pernicious influence on the offspring of habitual parental inebriety is a well recognized factor in pathology, and statistics seem to show that this cause is vastly more operative when of the two parents the mother is the sinner This indeed, is only what one would anticipate, in view of the fact that for nine months the fetus remains exposed to the baneful influence of the alcohol, taken persistently Sobriety on the part of the father has little effect so far as the health and vitality of the child is concerned and in presence of maternal drunkenness may almost be discarded, although no doubt the result of two bad strains would intensify the consequent mischief The influence of chronic parental inebriety in this connection bears mainly on the higher departments of the nervous system, producing more or less marked intellectual inferiority and a functional incapacity on the part of what may be described generally as the moral function of the brain For instance, the children of drunken mothers are liable to become epileptic, hysterical or neurasthenic, are predisposed to infantile paralysis, and have an imperfect conception of the moral obligation of truth in spite of careful training which, by the way, they do not usually get Their emotions and passions cannot be brought under adequate control, consequently they furnish a large contingent to the criminal and to what the criminologist would call the irresponsible classes Looked at from this point of view, it becomes obvious

that criminal tendencies are of the nature of a constitutional disease to be dealt with preventively and therapeutically rather than vindictively

Leprosy in Herzegovina

Dr Vokurka has returned from Herzegovina (Jugoslavia), whither he betook himself for the purpose of study in loco the probable causes of the prevalence of leprosy in that country He found that the disease is very sparingly distributed over Bosnia and Herzegovina (before the war parts of the Austro-Hungarian monarchy), and is nowhere very abundant and affects primarily the native population Dr Vokurka surmises that it was probably a new disease when first recognized in Sarajevo some 150 years ago, since which time it has gradually extended over the whole country The principal point of interest in these observations is the confirmation which Dr Vokurka has found of his theory that leprosy is due to deficient alimentation, the consumption of badly cured mutton This fact is in harmony with the finding of Prof Jonathan Hutchinson, who found in studying leprosy in South Africa that the disease is due to the consumption of badly cured salt fish Dr Vokurka is constrained to admit that the evidence is in favor of the disease being sometimes communicated from man to man, not, however, by direct contagion, but by the consumption of food contaminated by manipulation by leprous persons As this method of transmission is possible only under cover of the grossest hygienic neglect, its spread mainly among the poorer classes is explained The conclusions formulated by Dr Vokurka are in favor of legislative control of the sale of food, the education of the public as to the methods of transmission, and the establishment of small leper homes into which the victims of the disease should be induced to go during the infectious period

Human Actinomycosis in Bukowina

The district medical officer in Czernovitz has been notified that near the Bessarabian border there are some human actinomycosis cases He duly started to visit this district and examined all the reported cases The affection was in nearly every case (eleven) on the face or the neck In each case the clinical diagnosis was confirmed by the microscopic examination of the pus To these eleven cases he would add five others, noted by a colleague in Kisinan which, added to all those published, gave a total of thirty-six cases of human actinomycosis known up to the present in the mideastern part of Europe Out of the thirty-six cases, twenty-one were localized in the face and neck and fifteen in the viscera As regarded the prognosis of that affection, the district officer was able to procure information on the final lot of about 250 patients both at home and abroad By these documents it was found that the mortality which was only from 2 to 3 per cent in the cutaneous forms and 10 per cent in the cervicofacial forms, rose to 30 per cent when the malady was deeply situated in the temporomaxillary region, to 65 per cent in abdominal actinomycosis of intestinal origin, and to 85 per cent when the liver or cerebrospinal system was attacked The gravity of the visceral forms arose from the difficulty of treating due to the extended infiltration of the malady

Infection of the Ears of Schoolchildren

An interesting and important report was laid before the Medical Society of Budapest by Dr A Muller, who examined the ears of 500 schoolchildren The investigation was undertaken with the object of ascertaining the amount of ear disease in children of the poorest class, and if necessary, of drawing attention to the subject Various tests were adopted, into which it is needless here to enter, save in the case of the meaning placed on the term "normal" By this was meant that the membranes appeared normal and that the whispered voice could be heard at a distance of 6 meters Inability to pass this test with one or both ears was present in 245 out of 500 children Foreign bodies were found in the ear in eleven children, eight of whom were girls Out of eighty-seven cases of deafness there were adenoids in sixty-one, 127 of the total number of children had discharge from one or both ears, and in forty-three cases the discharge was suppurative The number who had previously suffered from middle ear discharge was 123, and of these sixty-nine had adenoids, and perforation was present in twenty-four, while adenoids were found in all in 214 children, of whom 189 presented some aural troubles Dr Muller finally raised the question as to what steps should be taken in the matter by the authorities He recommended that the systems employed in Germany, England and Sweden should be investigated and reported on

VIENNA

(From Our Regular Correspondent)

June 8, 1921

A One Day Strike of Physicians in Austria

The serious dissatisfaction of the medical profession with the behavior of the government toward them has aroused angry feelings among physicians, as explained in my previous letter The often threatened manifestation of this feeling took place a few days ago when all practitioners in this country stopped working for a day as a demonstration against the government Both the physicians in the country and those in the towns were invited to attend a mass meeting in the large assembly hall in Vienna, and upward of 2,000 of them were present when a resolution embodying the demands of the profession was unanimously carried The medical councils and the medical organizations had united their efforts to bring about a universal action, all hospitals, ambulances, charity institutes, private physicians and clinics on that day stopped working Only absolutely necessary first aid was rendered by the few men delegated for that purpose All other men had to be present at the mass meeting, and for the first time in the history of medicine in this country we had no "outsider" The demonstration has proved to the government that, if necessary, the medical organization and corporations have their members sufficiently under control to insure absolutely efficient working of a strike if that should be deemed necessary And the government was also made well acquainted with the demands of the profession, for the resolution mentioned above contains the following points The medical profession demands that in all questions pertaining to the social welfare of the population or the profession alone, the opinion of the authorized representatives of the medical profession be asked before such bills or acts be drafted, and such opinions be duly considered according to economic interests of physicians, that a medical act be at once brought before the National Assembly regulating the rights and duties of physicians and permitting that the interests, both ethical and material, of the profession be duly looked after, the antiquated sickness insurance institutions should be reorganized from a modern standpoint The interests of the insured persons should be brought into better relation with the economic conditions of both parties concerned For this purpose, an immediate formation of a special committee on that subject is demanded A supreme board of health, in which the medical men would have to be given the absolute majority of the members, is required The profession does not object to the cooperation with nonmedical men, but their number must not be overwhelming, as hitherto The ministry of health should be made independent and not form merely a department of another ministry, as hitherto A new public health act is demanded, giving proper attention to the achievements of modern science, especially prophylaxis and hygiene The officials of the state are to be held respon-

sible for all damage caused by their doings to the health of individuals just as much as any other private person Compulsory instruction in hygiene is recommended for all schools, permission to treat the diseased human body to be granted only to fully qualified medical men after serving a period of two or three years in hospitals There should be insurance against sickness and invalidity, as well as old age pensions, for all doctors of medicine A modern reform of the medical curriculum is demanded, and compulsory free postgraduate instruction by courses every few years combined with practical classes The profession, which for years has been asking and petitioning in vain, without receiving anything else but vague promises, has now lost its patience, and unless the government gives definite and convincing proof of its willingness to comply with the justified demands of the profession within four weeks, physicians are prepared to fight it out and stop all their work. It may be mentioned that while formerly a large proportion of the profession abhorred the idea of a medical strike now all corporations, including the professors of the universities, the officers of public health and the nonpracticing doctors of medicine are unanimous as to the admissibility of this modern weapon in the fight for the existence of the profession And even the laity is in favor of the attitude of the profession, however strange this may seem We have learned here that the men at the head of the state at present are not accessible to the arguments of common sense unless they are backed by a more or less comprehensive display of suave force The position of physicians is much strengthened by the fact that the public finds it does not get the benefits it is entitled to from the existence of an excellently educated body of physicians in this country of old medical fame

Precarious Position of the "House Physicians" in Vienna

A large percentage of the general practitioners in this city are in a critical economic position, as was pointed out at one of the recent meetings of the "Economic Organization" The former house physician is virtually dying out The bulk of the middle classes are now unable to procure any pay for the services of a private physician and must turn to hospitals and outpatient departments and give up all idea of comfort during illness Apart from the small number of specialists and surgeons or internists who practice among the newly rich, physicians had to apply for one of the posts in the Krankenkassen or sickness insurance clubs The pay thus obtained is the chief income of the majority of physicians If we take also physicians appointed in the theaters, and in public health offices or other private or public corporations, more than 70 per cent of all practitioners of this city are receiving a fixed salary and their time is taken up by such offices Still these sources of income are not sufficient to enable the physician to keep up the former standard of life Servants or carriages are things of the past with the vast majority of us, and numerous physicians and their families are patrons of the war kitchens where food is rather below the caloric standard requisite for the hard work done by the men New clothes, books, and attendance at the theater or concerts are luxuries at present, not admissible for the average physician, and the Economic Organization has all hands full of work to assist many men, whose social and moral position is at the verge of becoming intolerable The report on which the remarks of this paragraph are based was read at the meeting of the committee and was not intended for public notice, because it was deemed harmful to let the public know exactly how badly off some of our confreres are

Lack of Cadavers for Dissecting

The smooth course of instruction of the would-be young physician of bygone days has given place in many instances to serious difficulties, owing to lack of money The expenditure for chemical reagents, apparatus and rabbits or dogs, to say nothing of bigger animals or books, has become too heavy a burden for many laboratories and institutes These drawbacks can be overcome, as soon as money is forthcoming either from the state or from private sources But there is another important difficulty, not surmountable by money alone. The dissecting theaters of our anatomic institutes are lacking dead bodies This is due directly to the downfall of the empire for formerly sick people from all parts of the vast country, comprising more than 50,000,000 inhabitants, flocked to the medical center, Vienna, and many persons died here in the hospitals, without the bodies being claimed by their friends Now we have a reservoir of only 6,000,000 to draw on and even in every middle-sized town there are good hospitals, so that the influx to Vienna is diminished still farther And those who do die in the city's hospitals are nearly all claimed by their friends The result is that the students of the first semester have to restrict themselves to the study of skeletons or preserved wet or dry specimens, and to watch the few luckier groups dissect a casually obtained corpse, and wait until something falls to their lot in the same line. Of course such a state of things cannot be permitted to go on. It is paramount that a law be passed, securing ample opportunity for dissecting by regulating which body can and which cannot be claimed by the authorities of the faculty for purposes of instruction

BERLIN

(From Our Regular Correspondent)

May 21, 1921

Roentgen-Ray Treatment of Malignant Growths

At the recent Berlin meeting of the German Surgical Society Professor Perthes of Tubingen gave a detailed report on the roentgen-ray treatment of malignant tumors Passing over matters of technic, he considered mainly the problem as to what roentgen-ray treatment had accomplished and what attitude we are to take toward it in viewing the indications for operative intervention Of course, radium treatment and combined radium and roentgen-ray treatment were also discussed Skin carcinomas, not only basal-cell but also squamous-cell cancers, can be cured by irradiation without operation If carcinomatous glands are present, success is not so certain In carcinomas of the lip treated by roentgen irradiation, freedom from recurrence could be established after three years in 80 per cent of the cases The cosmetic result is better than is secured by operation Likewise in carcinoma of the penis freedom from recurrence was observed for a period of three and a half years Carcinomas of the mucous membranes react poorly to roentgen rays but better to radium In carcinoma of the tongue, combined treatment may be successful In tumors of the jaws, surgery has made great progress so that here roentgen irradiation need not be considered In carcinomas of the pharynx and larynx clinical cures can be effected by roentgen irradiation, but recurrences soon present themselves Only in carcinoma of the larynx located above the vocal cords has roentgen irradiation accomplished favorable results, carcinomas occupying a lower position should be operated on In esophageal carcinoma favorable results have occasionally been brought about by combined radium and roentgen-ray treatment However, during treatment, edema of the glottis frequently occurs, which may render tracheotomy necessary In carcinomas of the gastro intestinal tract there is no reason to depart from operative treatment. In carcinoma of the rectum the problem does not appear to be solved as yet Of five cases receiving combined radium and roentgen-ray treatment three resulted fatally, two patients are still alive thirty-four months after the treatment and are in very good condition Carcinoma of the breast should receive operative treatment, as roentgen irradiation effects only a

clinical cure and recurrences soon appear Also in carcinoma of the uterus only a few selected cases are suited to roentgen irradiation Therefore, only cutaneous cancers of the lip, possibly carcinomas of the tongue and esophagus, laryngeal tumors above the vocal cords and perhaps certain rectal carcinomas are amenable to roentgen irradiation All other cancers should be operated on, with the exception of a certain number of uterine carcinomas Also in the case of inoperable carcinomas good results may be accomplished within definite limits, but lasting results are the exception However by means of radium and roentgen-ray treatment it is sometimes possible to so influence inoperable tumors as to make them operable Whether or not carcinomas of the stomach should be subjected to roentgen-ray treatment appears rather doubtful in view of the unfavorable results hitherto secured As for postoperative prophylactic treatment Perthes, and likewise Tietze and Payr have not achieved very good results Perthes observed more recurrences than usual, especially during the first year, which induced him to give up prophylactic irradiation Of the sarcomas, the lymphosarcomas react well to roentgen rays In the case of periosteal sarcomas, roentgen irradiation should be given a trial As for myelogenic sarcomas, operation is preferable if resection will serve the purpose If resection is not sufficient but removal seems alone adequate, roentgen irradiation should be tried Sarcomas of the upper jaw should be given operative treatment, whereas gliomas of the brain and hypophysial tumors react well to roentgen irradiation Also fibrosarcomas of the nasopharynx are adapted to irradiation The primary and late injuries following roentgen irradiation (*roentgen later*, or roentgen sickness and roentgen cachexia) should not be undervalued, but the principal drawback of roentgen irradiation is the uncertainty of the results Perthes doubts whether there is any such thing as a carcinoma dose in the sense that Seitz and Wintz use the term We can only speak of a minimal carcinoma dose All tumors do not react alike to roentgen rays, in fact, within the same tumor the various cells react differently However, Perthes holds the view that the roentgen rays react differently on the spot to which they are applied By means of biologic experiments their effect on cell division, karyokinesis, has been established They exert a special influence on the growing cell Their action on the cells is elective Ova and spermatozoa, white blood cells and tumor cells are damaged more by roentgen rays than are other cells in the vicinity But this effect on the cell does not constitute the whole effect of the roentgen rays A change is brought about in the whole organism Not only a plus of roentgen rays is injurious, also too small doses damage through their irritative effect (carcinoma arising after roentgen-ray treatment) Furthermore, through roentgen irradiation defensive forces in the organism are mobilized and an accentuation of the healing processes is attained

Chief Medical Inspectors of Schools in Berlin

In Germany, as is well known, there are two distinct kinds of school physicians the chief medical inspectors of the *Hauptamt* and the assistant medical inspectors of the *Nebenamt* The increasing demands of school hygiene have fortunately brought it about that the latter are decreasing while the former are increasing Through the influence of the authorities the same process is going on in Greater Berlin The duties of school physicians are to be considerably increased A thorough examination of all schoolchildren at least twice during the period of school attendance is contemplated Furthermore, it is planned to introduce a new type of health certificate one of which will be made out for each child and which will be kept up to date by the school physicians Medical inspection of schools is no longer to be confined to the *Volksschulen* (elementary and grammar schools) but is to include also higher institutions of learning and professional, industrial and continuation schools It is estimated that the inclusion of the higher institutions would bring the number of children in Berlin to be examined by school physicians up to 230,000 In accordance with this plan, six chief medical inspectors are to be added to the present force The fifty assistant medical inspectors are to have the oversight of 3,500 children each, at the most, whereas heretofore they have inspected more than 4 000

Marriages

CLARENCE AXTELL PENMAN to Miss Annie Elizabeth Lanier both of Beaumont, Texas, at Houston, Texas, June 29

FRANCIS XAVIER KEARNEY, Baltimore, to Miss Louise A Jaon of Brittany, France, at Baltimore, June 30

EVERETT RUSSELL FERGUSON, Toms Creek, Va, to Miss Amelia Brizzie of Chattanooga, Tenn, June 22

DAVID C MCCULLOUCH, U S P H S, Camp Kerney, Calif, to Miss Zorayda Lorimer Denver, March 12

LOUIS FERNALD FOSTER, Bay City, Mich, to Miss Kathryn Mae Keller, Philadelphia, June 11

GEORGE ELMER KALTER, U S Navy, to Miss Vera Stevenson of Maplewood, N J, May 31

SAMUEL MCKEE LOUGEAY, Belleville, Ill, to Miss Emma Kuhn of Brentwood, Ill, July 2

LAURENCE E HINES, Bozeman, Mont, to Miss Corys E Zinn of Flanagan, Ill, June 29

CHARLES E LYDAY, Gastonia, N C, to Miss Naomi Davie Pool of Kinston, N C, June 28

LAWRENCE DRAPER Chicago, to Miss Minta Watkins of Peoria at Ottawa, Ill, June 28

WELLS TEACHNOR, JR, to Miss Marguerite Putnam, both of Columbus, Ohio, June 2

CLAUDE F OSBORNE to Miss Anna Cronin, both of Hampton Iowa April 12

FLOYD M COLLINS, Clarks, Neb, to Miss Clara Beck of Peru, Neb, May 21

CHARLES REIFSCHNEIDER to Miss Viola L Barnett, both of Baltimore, June 28

FORREST BERTRAM AMES to Miss Mildred Mabel, both of Boston, June 8

JOHN J GLEESON, Omaha, to Miss Grace Peters, Red Oak, Iowa, June 8

Deaths

Charles Hermon Thomas, Philadelphia, University of Pennsylvania, 1865, assistant surgeon, Civil War, member American Ophthalmological Society, and at various times connected as physician and surgeon with the Pennsylvania Hospital, the Wills Eye Hospital, the Lying-In Charity and Woman's Hospital, died, June 28, aged 82 He was professor of materia media and therapeutics at the Woman's College and visiting surgeon at the Philadelphia Hospital, also one of the founders of the Obstetrical Society, a fellow of the College of Physicians, and a member of the Medical Society of the State of Pennsylvania

Michael D Healy, Denver, Denver and Gross College of Medicine, 1906, L L M, 1907, R C P, Ireland, L L M, 1907, F, 1908, R C S, Ireland, member of staff, St Joseph's Hospital, Denver, member of the Colorado State Medical Society, captain, M C, Canadian Army, in World War, died, June 24 from heart disease, while on a fishing trip in the mountains near Denver, aged 40

George Phillip Stallman ⊕ Baltimore, Indiana Medical College, 1906, served in Spanish-American War, major in Medical Officers' Reserve Corps, Lieut, M C, U S Army, 1918, on staff of General Hospital No 2 Fort McHenry Baltimore, died, while on leave, June 23, at Irondequoit, N Y, from drowning, aged 45

⊕ Indicates Fellow of the American Medical Association

Jefferson S Near, Watseka Ill Hahnemann Medical College and Hospital of Chicago 1876, was several times mayor of Watseka, and under President Cleveland's administration, served as member of local board of the United States Pension Commissioners, died in June aged 73

Cyrus B Newton, Stafford Springs Conn, Yale Medical College, 1856, at one time president of the Connecticut Medical Society, member state legislature 1880 warden state prison 1881-1893, died at the Johnson Memorial Hospital, June 19, aged 90

Ward Evans Hunt, Little Falls N Y, Albany Medical College Albany N Y, 1893, member of the Medical Society of the State of New York, former coroner of Herkimer County, died June 25, at the Faxton Hospital Utica, from diabetes, aged 53

Ferdinand, T Field, Elroy, Wis, University of Michigan Ann Arbor, 1884, member of State Medical Society of Wisconsin died June 22 from burns received when an electric light placed on his chest to relieve pain, ignited the bedclothes aged 70

Alfred D Sawyer ⊕ Fort Fairfield Me, University Medical College, New York 1880 also an oculist, served on the United States Board of Pension Examiners, resigning 1900 member state legislature 1919-1920, died, June 20, from cancer, aged 66

Edward S Vanderslice, Philadelphia University of Pennsylvania 1864 for forty-two years resident physician at the Philadelphia Dispensary member of the Medical Society of the State of Pennsylvania, died, June 28, from Bright's disease aged 78

William Melville Parry, Waynesburg Pa, Miami Medical College Cincinnati 1866, Civil War veteran, practicing physician in Greene County for nearly half a century, died in June from general debility aged 78

Nathaniel Greene Stanton, Newport, R. I Harvard University Boston 1866 captain in the Civil War, practitioner in Newport for over fifty years, died suddenly, July 1 aged 83

William A Lille ⊕ Monterey Calif, Bellevue Hospital Medical College N Y 1895, twice mayor of Monterey, took his own life, June 22, by shooting himself through the mouth, aged 53

Lycurgus L Staton ⊕ Tarboro N C., New York University Medical College 1869, a practitioner for fifty years in Tarboro, died, July 1, from heart disease aged 72

Richard P Berry, West Union Iowa Medical Faculty of McGill University Montreal Quebec 1888, member of the Iowa State Medical Society, died, April 17 aged 59

Henry B Nightingale, Philadelphia Jefferson Medical College Philadelphia, 1876, one of the founders of the Charity Hospital, Philadelphia died June 23, aged 66

Benjamin Levin Hill, Stuttgart, Ark, Arkansas Industrial University Little Rock, Ark, 1891, member of the Arkansas Medical Society, died, June 20 aged 53

Anthony E Hershiser, Reno, Nev Miami Medical College Cincinnati, 1880, Jefferson Medical College 1884, died, June 27 from pneumonia, aged 68

Charles Weil, Buffalo, University of Buffalo 1882, member of the Medical Society of the State of New York died June 16, aged 62

Lowell Ingersoll, Chicago, Hahnemann Medical College and Hospital of Chicago, 1896, died July 1 from biliary calculi aged 58

Ella B Cox, Pana Ill, Women's Medical College of Cincinnati, 1889 died, July 5 from nervous trouble, aged 62

Frederick Walter Eberlein, Lacon, Ill Rush Medical College 1886, died June 20 from heat prostration, aged 61

George Morgan Ockford, Ridgewood, N J, Homeopathic Hospital College Cleveland, 1872, died June 26 aged 76

Madison Bryant, Eubank Ky (license, Kentucky 1895 thirty-one years of practice), died, June 18, aged 82

John C Wood, Portland, Ore, Medical Department Butler University Indianapolis, 1879, died, June 28 aged 71

Henry J de Haan, East St Louis Ill, Missouri Medical College 1884, died, June 25, from cancer, aged 63

George Herbert Fox, Janesville, Wis, Bellevue Hospital Medical College New York, 1869, died, June 28

Bela J Ward, Albany, N Y, Albany Medical College, 1884, died, June 25, after a long illness, aged 63

The Propaganda for Reform

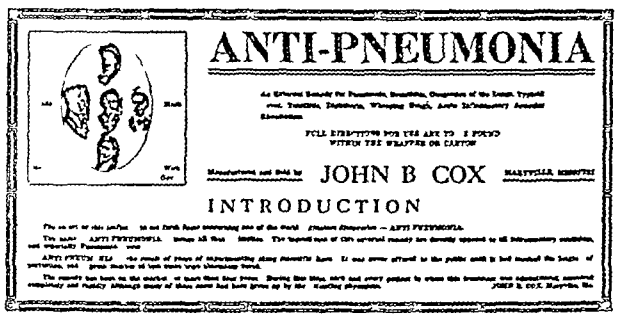
IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the U S Department of Agriculture

Hobo Kidney and Bladder Remedy—A quantity of this article shipped in June, 1920, by the Hobo Medicine Co Shreveport La, was declared misbranded by the federal authorities The stuff was represented as a treatment or cure for Bright's disease, backache, rheumatism, inflammation of the bladder etc These claims were declared false and fraudulent In November, 1920, judgment of condemnation and forfeiture was entered and it was ordered by the court that the product be destroyed—[*Notice of Judgment No 8710, issued April 27, 1921*]

Anti-Pneumonia—In March, 1917 John B Cox of Maryville Mo shipped a quantity of this preparation which was declared misbranded Analysis of a sample of the article by the federal chemists showed it to consist of a brownish-black viscid semi-liquid containing chiefly wood tar, mineral



matter similar to talc and a small amount of glycerin. It was falsely and fraudulently represented as a remedy and cure for bronchitis acute inflammatory and articular rheumatism and suppressed menstruation and as a remedy for typhoid fever diphtheria and measles In September 1919, John B Cox pleaded guilty and was fined $10 and costs—[*Notice of Judgment No 8791, issued May 13, 1921*]

Gon-Kure—A quantity of this article alleged to have been shipped by the Gem Medicine Co, St Louis, Mo, in April 1919 was declared misbranded The preparation consisted of a fluid for injection and tablets for internal use The Bureau of Chemistry reported that the injection consisted of glycerin and water with small amounts of boric acid, zinc sulphate phenol (carbolic acid), menthol hydrastis and alcohol The tablets, according to the same authority, consisted essentially of magnesium carbonate, copaiba, cubebs and santal oil The product was falsely and fraudulently labeled as an effective remedy for gonorrhea and acute or chronic cystitis In October, 1920, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[*Notice of Judgment No 8675, issued April 28 1921*]

Potasul Potash Sulphur Water—The Potash Sulphur Springs Inc Hot Springs, Ark shipped a quantity of this preparation in July, 1916 Analysis of a sample showed that the constituents after which the product was named were not the predominating constituents of the water nor were such constituents the characteristic or distinguishing element of the water The product was declared misbranded because the name represented that the article was a water containing an appreciable amount of potash and sulphur, whereas "in truth and in fact it was a water which contained only a trace,

of any, of potash and sulphur" Furthermore, it was falsely and fraudulently represented as a cure for diseases of the stomach, bladder and kidneys "when, in truth and in fact, it was not" In October, 1920, the case having come on for final disposition, and the defendant company having failed to appear, judgment by default was entered and the court imposed a fine of $50 and costs—[*Notice of Judgment No 8641, issued April 26 1921*]

Short Stop Injection and Short Stop Capsules—A quantity of these products, consigned in April and November, 1918, and May, 1919, respectively, and labeled in part 'Prepared by the Massman Chemical Co, Covington, Ky," was seized by the federal authorities on the charge that the preparations were misbranded The Bureau of Chemistry reported that analysis showed the injection" to consist essentially of a dilute solution of zinc phenolsulphonate, berberin sulphate, a trace of phenol (carbolic acid) and a bismuth salt in suspension The same chemists reported that the contents of the "capsules" were methylene blue, sodium bicarbonate and salol The preparation was falsely and fraudulently represented as a cure for gonorrhea and gleet and for "Leucorrhea, Kidney and Bladder Affections Chronic Seminal and Mucous Discharges" In March, 1920, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[*Notice of Judgment No 8604, issued April 26, 1921*]

Fisher's Indian Remedy—Anthony Fisher, trading as the Anthony Fisher Co, Salt Lake City, Utah shipped in March, 1919, a quantity of Fisher's Indian Remedy which was misbranded The Bureau of Chemistry reported that the product consisted of uncoated compressed tablets containing aloes, emodin, strychnin, saponin-like glucoside, reducing sugars, and talcum The claims in the trade package represented the product to be an effective remedy, treatment, cure and preventive for indigestion, stomach trouble, sick and nervous headache, neuralgia, kidney and liver complaints, rheumatism, pimples, syphilitic affections, female weakness, hay fever, catarrh, eczema, paralysis, insanity diseases of the liver, failing eyesight, gallstones, cancer, piles, ovarian dropsy, Spanish influenza and stomach ache There were also a few more conditions which it was said to cure In July, 1920, Fisher pleaded guilty to making false and fraudulent claims and was fined $25—[*Notice of Judgment No 8663, issued April 28, 1921*]

Santal Bowne—A quantity of this product alleged to have been shipped by the General Drug Co, New York City, in November, 1916, was declared misbranded by the federal authorities Analysis of a sample of the article by the Bureau of Chemistry showed it to consist of capsules containing oils of santal and cassia The preparation was declared misbranded because there were statements on or in the trade package that were false and fraudulent in that they mislead the purchaser into the belief that the article could be successfully used in the treatment and cure of gonorrhea Furthermore, the purchaser was further led to believe that the product was manufactured and packed in a foreign country when in fact it was manufactured and packed in the United States In December, 1919, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[*Notice of Judgment No 8752, issued May 13, 1921*]

Lallemand's Rheumatism, Gout and Neuralgia Treatment—In March, 1919, the Meyer Bros Drug Co, St Louis, Mo, are alleged to have shipped in violation of the Food and Drugs Act a quantity of drugs labeled in part "Lallemand's Rheumatism, Gout and Neuralgia Treatment Prickly Ash Bitters Co, Sole Proprietors Formerly called Lallemand's Specific" The Bureau of Chemistry analyzed a sample of the article and reported that it was a water-alcohol solution containing potassium iodid, potassium acetate and extractives from colchicum The preparation was falsely and fraudulently represented as an effective preventive, remedy and cure for acute and chronic rheumatism, neuralgia, muscular and capsuler rheumatism and locomotor ataxia "when, in truth and in fact, it was not" In November, 1920, a plea of *nolo contendere* was entered on behalf of the Meyer Bros Drug Co and the company was fined $25 and costs—[*Notice of Judgment No 8741, issued April 27, 1921*]

Robert J Pierce's Empress Brand Tansy, Cotton Root, Pennyroyal and Apiol Tablets—In April, 1920, a quantity of this product is alleged to have been shipped by the Robert J Pierce Co, New York City It was represented as a safe emmenagogue and a cure for suppression of the menstrual function, and was called "The Celebrated Female Regulator" Analysis of a sample by the Bureau of Chemistry showed it to consist of chocolate coated tablets consisting of aloes, iron (ferrous) sulphate, pennyroyal, and plant extractives The claims made for the product were declared false and fraudulent in that the article contained no ingredient or combination of ingredients capable of producing the curative therapeutic effect claimed for it In October, 1920, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[*Notice of Judgment No 8676, issued April 28, 1921*]

Correspondence

WHERE IS THIS COUNTRY, ANYWAY?

To the Editor—I recently received a "Preliminary Announcement of the Second International Congress of Eugenics" to be held in New York City in September In a moment of leisure I casually looked over the General Committee, and, as the matter has frequently been called to my attention, I looked over the medical membership of the committee with respect to their geographic locations The geographic distribution of the medical membership of the committee is of the sort that one frequently sees, and that is, I believe, open to criticism Out of a membership of 103 on the General Committee, there are nineteen physicians Of these, three are in the government service in Washington There is one from Oregon, one from Michigan, and one from as far west as Buffalo, New York There are thirteen other medical men on the committee, all of whom are located on the Atlantic Coast north of the Potomac River Three of them are Johns Hopkins professors, and a fourth is a transplanted Johns Hopkins professor, none of them being notable, as far as the writer knows, for his prominence in eugenics In other words, 25 per cent (excluding the government representatives who are all from Washington) of the membership of this 'International" Committee is from Johns Hopkins Over 50 per cent is allowed for the rest of the Atlantic Coast, and less than 20 per cent for the United States not including the Atlantic Coast It is not a grateful matter to raise these questions, but one hears comment on them so frequently in private that the writer ventures to emerge into print and call attention to them Johns Hopkins is a good place, but does it constitute 25 per cent of the representation of the United States in medicine? Are they not too fond of themselves in things of this sort? Everybody knows how committees of this kind are made up One man, or a few men, pick out the men that occur to them as suitable But in an "International" committee would it not be worth while to give the matter a little thought and select the committee with some regard for actual representation? Is it proper or representative to select the entire committee of an "International" congress from the Atlantic Coast? In addition to Eugene, Ore, Buffalo and Battle Creek, there are several places in the United States outside of the eastern fringe of Massachusetts, New York, New Jersey and Maryland, and there are some representative medical men in them I do not know many specialists in eugenics in these outlying districts, but no more do I find many men, whose work in that field is known to me, included

in this general committee But the geographic distribution of this particular committee is taken merely as an illustration of the membership of many similar bodies, otherwise it would not be worth while to call attention to the matter Of course the members of such a committee are always so many bellwethers, but if you want the flock to follow, would it not be a good plan to select bellwethers who are representative of the whole country?

W A PUSEY, M D, Chicago

CANCER OF THE TONGUE A PREVENTABLE DISEASE

To the Editor —We all know that the chimney-sweep cancer of the scrotum has disappeared since the human being no longer accompanies the sweep down and up the chimney This cancer of the skin of the scrotum was due to long and continued irritation by dirt

In a recent reinvestigation of 260 cases of cancer of the tongue, the evidence seems convincing that this cancer is due to long and continuous chronic irritation by tobacco, by repeated burns from smoking, by continuous irritation or direct wounds of dirty, rough teeth, or improperly fitted plates In carefully taken histories there is hardly a record of a cancer of the tongue in an individual who has not been warned by definite local lesions which were not cancer and which have been present months, and usually years, before the development of cancer

There is every evidence to conclude that if this information is widely and correctly disseminated, and the public, the medical and dental profession realize that cancer of the tongue is a preventable disease, death from cancer should largely disappear

My experience with the operative treatment of cancer of the tongue in its early stage shows only 62 per cent of five-year cures and only 12 per cent of five-year cures after the most extensive radical removal of advanced cancer During a period of thirty-two years (1889 to 1921) there have been 14 per cent (thirty-six cases) of early cancer of the tongue with 62 per cent five-year cures, 28 per cent. (seventy-five cases) of advanced or late cancer of the tongue, with 12 per cent five-year cures, and 18 per cent of inoperable cancers of the tongue with no cures

This study, which has been carried on continuously since 1910 leads me to the conclusion that more lives can be saved by the education of the public and the medical and dental professions on the causes and prevention of cancer of the tongue than by any improvement in surgical technic, or any combination of treatment with the knife, cautery, radium or roentgen rays, for cancer of the tongue

In my own sphere of educational influence, the propaganda of teaching has increased the number of benign precancerous lesions from 3 per cent in the first decade (up to 1900) to 48 per cent in the third decade (1910-1920), and so far in the beginning of the fourth decade (1920-1921) the percentage of benign lesions is 55 There is every reason to believe that these 105 men who have come under observation entirely as the result of educational propaganda, have been largely protected from cancer The cause of their local lesion has been removed, and they have been informed on the details of oral hygiene for their future protection

During the same period the percentage of early cancer has increased from 3 to 23, advanced cancer has decreased from 48 to 11 per cent, and hopeless cancer from 44 to 11 per cent

Cancer of the tongue is a disease of men who smoke in excess and carelessly, or who chew tobacco constantly and, in addition, neglect the teeth

The most common warning is leukoplakia, single multiple patches or diffuse white patches in the mouth The individual is always aware of them, usually for years before cancer develops The treatment is to remove the cause The use of tobacco in all forms should cease at once, and the teeth should be put and kept in perfect order It may require three or four years for the leukoplakia to disappear

The second most common warning is a local area of irritation adjoining ragged, dirty teeth Tobacco should be discontinued, and the teeth put and kept in perfect order

Syphilis as an etiologic factor has been exaggerated If there is a history of syphilis and a positive Wassermann reaction specific treatment should be promptly administered, but subsequent development of cancer will not be prevented by this treatment alone The causes—tobacco and dirty, rough teeth—must be eliminated at once

Local treatment of leukoplakia or of the area of irritation by radium roentgen or any irritating caustic is contraindicated The cause must be removed first, then, if the local lesion except leukoplakia, does not rapidly disappear, it should be excised with a good margin of healthy tissue with the cautery Do not excise a piece for diagnosis Remove the area with such a good margin of healthy tissue that, if the microscope reveals early carcinoma, there will be no indication for further local operation

The prevention of death from cancer of the tongue depends on these simple instructions in oral hygiene

JOSEPH C BLOODGOOD, M D, Baltimore

CHIROPRACTIC, NOT A NUXATED, VICTORY

To the Editor —On page 130 of THE JOURNAL, July 9 issue I note that you give Nuxated Iron credit for Dempsey's victory I feel that I should inform you that you are absolutely wrong and inform you that the Des Moines *Register* recently gave a half column to the statement that Dempsey's victory was due mostly to the efforts of a chiropractor who was on his training staff and who was placed there by a certain Dr Palmer of Davenport I hope you will give credit where it is due

CHARLES L JONES M D, Gilmore City, Va

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed Every letter must contain the writer's name and address but these will be omitted on request

COLLOIDAL GOLD SOLUTION

To the Editor —Some time ago you gave a description of Lange's colloidal gold test but not the method of preparing the 'solution Can you give me the latter information?

F H M D Oregon

ANSWER —According to a recent publication of Geltler and Jackson (*Arch Neurol & Psychiat* 6 71 [July] 1921) a satisfactory colloidal gold "solution' can be thus prepared

Into a clean 1 5 liter Florence flask place 1 liter of specially distilled water (For preparation of the water to 10 liters of water in a large copper still add a few crystals of potassium permanganate and distil rejecting first 300 c c) To this add 10 c c of 1 per cent gold chlorid solution 7 c c of 2 per cent potassium carbonate solution and 0 5 c c of 1 per cent oxalic acid solution Heat this mixture to the boiling point and at this temperature remove the flask from the flame holding it by means of a towel and shake the contents vigorously While the solution is still in motion add quickly from 0 2 to 0 3 c c of formaldehyd Solution U S P and at once shake the flask and contents thoroughly for from one half to one minute After from three to four minutes the color usually commences to develop If however there should be no indication of color the solution must again be shaken well and while still in motion an additional 0 1 to 0 2 c c of Formaldehyd solution quickly added this addition almost invariably produces the desired change At no time during this process should the agitation be stopped The color should develop rapidly to a deep red If however there is a delay in the appearance of color the mixture should be allowed to stand and in a minute or two the color will start to develop at this instant the solution should again be thoroughly shaken until the color reaches a deep red shade The entire process from the moment the solution reaches the boiling point until the color is fully developed requires at the most about three minutes

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

MARYLAND Baltimore July 19 Sec Regular Board Dr J McP Scott 141 W Washington St Hagerstown

SOUTH DAKOTA Deadwood July 19 20 Director of Medical Licensure Dr H R Kenaston Bonesteel

California February Examination

Dr Charles B Pinkham, secretary, California State Board of Medical Examiners, reports the oral and written examination held at Los Angeles, Feb 14-17, 1921 The examination covered 9 subjects and included 90 questions An average of 75 per cent was required to pass Of the 72 candidates who took the physician's and surgeon's examination, 37, including 10 osteopaths, passed, and 35, including 3 osteopaths, failed Two candidates failed to receive osteopathic licenses One hundred and thirty-three candidates were licensed by reciprocity Three candidates were licensed on government credentials Of the 8 candidates who took the examination for drugless practitioners, 5 passed and 3 failed One candidate passed the test of competency and received a certificate to practice as a practitioner Ten candidates received osteopathic certificates by reciprocity Two candidates were licensed to practice chiropody The following colleges were represented

College	Year Grad	Per Cent
PASSED		
College of Physicians and Surgeons Los Angeles	(1920)	78 5
College of Physicians and Surgeons San Francisco	(1920)	80 5
Leland Stanford Junior University (1920) 87 1	(1921)	88 7
Yale University School of Medicine	(1913)	83 3
George Washington University	(1920)	85 3
Rush Medical College (1917) 87 1 (1919) 88 1 88 2 90 6 95 3	(1920)	85 3
University of Illinois	(1920)	86
Harvard University	(1920)	89
University of Michigan Medical School	(1904)	75
University of Minnesota Medical School	(1920)	86 8
Columbia University (1919) 88 5	(1920)	77 1
University of Oregon	(1920)	76
University of Pennsylvania	(1918)	87 5
University of Manitoba	(1913)	90 3
University of Toronto	(1910)	90 9
McGill University (1897) 86 2 (1900) 81 7	(1919)	83 5
Tokyo Charity Hospital Special Medical School	(1914)*	75 1
University of Leyden	(1898)*	84
FAILED		
College of Physicians and Surgeons Los Angeles	(1920)	68 9
College of Physicians and Surgeons San Francisco	(1918)	65 6
Chicago Homeopathic Medical College	(1889)	67
Chicago Physio Medical College	(1896)	24
College of Physicians and Surgeons Chicago	(1892)	60
Hahnemann Med Coll and Hosp Chicago (1892) 64	(1899)	46
Rush Medical College (1900) 60	(1902)	55
Sioux City College of Medicine	(1896)	54
Kentucky School of Medicine	(1886)	56
Hospital College of Medicine Louisville	(1898)	53
University of Louisville (1895) 64	(1898)	42
Baltimore Medical College	(1895)	55
College of Physicians and Surgeons	(1897)	64
Grand Rapids Medical College	(1901)	69
Minneapolis College of Phys and Surg (1899) 71	(1900)	59
Kansas City Medical College	(1881)	50
St Louis College of Physicians and Surgeons	(1888)	50
Eclectic Medical College of the City of New York	(1896)	64
Eclectic Medical Institute Cincinnati	(1875)	60
Starling Medical College (1891) 69	(1895)	35
Jefferson Medical College	(1891)	64
Nashville Medical College	(1901)	20
University of Nashville	(1897)	44
College of Physicians and Surgeons Dallas	(1905)	66
Milwaukee Medical College	(1895)	65
University of Berlin	(1882)*	69
University of Palermo	(1913)*	62 9

College	Year Grad	Reciprocity with
LICENSED BY RECIPROCITY		
California Eclectic Medical College	(1914)	Washington
College of Phys and Surg, San Francisco (1918 2)		Nevada
Cooper Medical College	(1902)	Nevada
Denver and Gross College of Medicine	(1909)	Colorado
Gross Medical College	(1902)	Utah
Georgetown University School of Medicine	(1907)	Arizona
American College of Medicine and Surgery	(1904)	Illinois
Chicago College of Medicine and Surgery (1910 2) (1911) South Dakota (1913 2) Illinois (1915) Illinois (1917) Illinois		Illinois
Chicago Homeopathic Medical College	(1899)	Illinois
College of Physicians and Surgeons Chicago (1901) Washington (1903, 2) Illinois (1905) Illinois	(1889)	Iowa
Loyola University	(1917)	Utah
National Medical University Chicago (1902) New Mexico	(1899)	Wisconsin
Northwestern University (1881) Iowa, (1902) Wisconsin (1904) Illinois (1905) Illinois (1906) Illinois	(1901)	Idaho
Rush Medical College (1886) Illinois (1893) Kansas (1894) Indiana (1897) Illinois (1889) Minnesota Iowa (1901) Minnesota (1902) South Dakota (1903) Illinois (1914) Minnesota (1915) Illinois (1917) Illinois Nebraska		Illinois
University of Illinois	(1919)	Illinois
Indiana University School of Medicine (1910) Indiana	(1908)	Indiana
Drake University (1906) Iowa (1907) Iowa, (1913) Missouri	(1908)	Iowa
Keokuk Medical College (1893) New York	(1898)	Washington
State University of Iowa College of Medicine (1896) (1904) (1905) (1906)	(1915)	Iowa
State University of Iowa College of Homeopathic Medicine (1894) Iowa	(1903)	Indiana
College of Physicians and Surgeons Kansas City	(1898)	Illinois
University of Louisville (1889) Kentucky (1910) Colorado (1912) Iowa	(1898)	Texas
Tulane University	(1907)	Tennessee
Baltimore Medical College (1893) Indiana	(1906)	Arizona
College of Physicians and Surgeons Baltimore	(1904)	Arizona
Johns Hopkins University	(1912)	Illinois
Maryland Medical College	(1909)	Penna
University of Maryland (1900) Missouri	(1906)	Indiana
Boston University School of Medicine	(1902)	Mass
Harvard University	(1915)	Connecticut
Tufts College Medical School (1905)	(1907, 2)	Mass
Detroit College of Medicine and Surgery		Iowa
Minneapolis College of Physicians and Surgeons (1906) Minnesota	(1900)	Montana
Univ of Minnesota Med School (1900) Montana	(1906)	Washington
Barnes Medical College	(1898)	Missouri
Ensworth Medical College (1897) Missouri	(1907)	Iowa
Kansas City Medical College (1903) Utah	(1905)	Missouri
Marion Sims College of Medicine	(1899)	Illinois
Missouri Medical College (1881) (1889) New York	(1893)	Missouri
St Louis University School of Medicine	(1908)	Missouri
University Medical College of Kansas City (1909) Missouri	(1906)	Kansas
University of Missouri	(1898)	Missouri
Washington University	(1903)	Iowa
John A Creighton Medical College	(1907)	Nebraska
Lincoln Medical College	(1901)	Kansas
Albany Medical College	(1914)	New York
Cornell University Medical College	(1910)	New York
Fordham University	(1917)	New York
Woman's Medical College of the New York Infirmary for Women and Children	(1898)	Mass
Syracuse University	(1896)	New York
University of Wooster Medical Department	(1881)	New York
Western Reserve University	(1897)	Ohio
Jefferson Medical College (1883) Nebraska (1910) Idaho	(1907)	Montana
University of Pennsylvania (1887) Iowa (1899) Utah (1901 2) Pennsylvania (1902) Iowa (1903) Illinois	(1890)	Illinois
Western Pennsylvania Medical College	(1905)	Penna
Medical College of the State of South Carolina	(1917)	Florida
Meharry Medical College (1907) Oklahoma	(1909)	Tennessee
Vanderbilt University Medical Department	(1912)	New York
Baylor University	(1916)	Texas
Fort Worth School of Medicine (1914)	(1916)	Texas
University of Vermont	(1900)	Vermont
University College of Medicine Richmond (1903)	(1907)	Virginia
Milwaukee Medical College	(1905)	Wisconsin
Wisconsin College of Physicians and Surgeons	(1912)	Wisconsin
University of Bishop College	(1903)	Wisconsin
University of Manitoba	(1893)	Illinois
Montreal School of Medicine and Surgery	(1889)	Mass
University of Munich	(1912)	Wyoming

College	Year Grad	Endorsement with
ENDORSEMENT OF CREDENTIALS		
George Washington University	(1913)	U S Army
Washington University	(1909)	U S Army
Medical College of Ohio	(1884)	U S Army

* Graduation not verified

Maine March Examination

Dr Frank W Searle, secretary, Maine State Board of Registration in Medicine, reports the written examination held at Portland, March 8 9 1921 The examination covered 10 subjects and included 100 questions An average of 75 per cent was required to pass Of the 10 candidates examined 8 passed and 2 failed One candidate was licensed by reciprocity The following colleges were represented

College	Year Grad	Per Cent
PASSED		
Boston University School of Medicine	(1920)	81
Tufts College Medical School	(1920)	82
Temple University Department of Medicine	(1919)	79
University of Pennsylvania	(1919)	81
Laval University Faculty of Medicine	(1919)	80
McGill University Faculty of Medicine	(1916)	83
University of Montreal Faculty of Medicine	(1919)	79
Royal University of Hungary	(1917)*	75
FAILED		
Hahnemann Med College and Hosp of Philadelphia	(1915)†	75
University of Montreal Faculty of Medicine	(1920)†	79

College	Year Grad	Reciprocity with
LICENSED BY RECIPROCITY		
University of Maryland	(1917)	Penna

* Graduation not verified

† Fell below 60 per cent in anatomy

Book Notices

DIAGNOSIS AND TREATMENT OF BRAIN INJURIES WITH AND WITHOUT A FRACTURE OF THE SKULL By William Sharpe M D, Professor of Neurologic Surgery, New York Polyclinic Medical School and Hospital Cloth Price, $8 Pp 757, with 232 illustrations Philadelphia J B Lippincott Company, 1920

The author presents, in detail, reports of a large number of individual cases rather completely worked up, including careful data on the progression of the changes in the eye-grounds and in spinal fluid findings (the pressure variations accurately measured by the spinal mercury manometer), post-operative notes, and examinations made repeatedly for months and even years after the patient has left the hospital, in the belief that such a record of end-results will be of service to the general practitioner and the general surgeon He has confined himself to two general groups of cases acute and chronic brain injuries in adults, and acute and chronic brain injuries in the new-born and in children The latter group, he believes, presents a series of pathologic pictures and clinical problems which have been so frequently overlooked and even neglected that the reporting in detail of a large number of cases is of especial value to the obstetrician and the pediatrician In considering the indications for operation in acute intracranial injuries in adults, the relative unimportance of whether a fracture of the skull is present or not is continually emphasized In selecting cases for decompression, he differentiates sharply between the clinical expressions of intracranial pressure before and after the advent of the stage of medullary compression and the ensuing edema and collapse—the two periods in which intervention to relieve pressure is distinctly contraindicated, one described as those of the primary shock, and one as those of the stages of medullary compression and edema The most trustworthy criterion of an increase in the intracranial pressure while decompression is still justified are the progression of the eye-ground changes and a marked increase in cerebrospinal fluid pressure as revealed by lumbar puncture He believes that the operative indications are the same whether the pressure increase is due to hemorrhage or to edema An interesting study is attempted of the end-results in patients having brain injuries in whom either no surgical intervention was instituted or intracranial pressure was not relieved because of a faulty type of operation or of failure to open the dura He finds that even several years after discharge from hospital care, 67 per cent of such cases present major symptoms attributable to the results of the injuries

METHODIK DER BLUTUNTERSUCHUNG, MIT EINEM ANHANG ZYTODIAGNOSTISCHE TECHNIK Von Dr A v Domarus Direktor der Inneren Abteilung des Auguste Victoria Krankenhauses Berlin Weissensee Paper Price 58 marks Pp 489 with 197 illustrations Berlin Julius Springer 1921

This work forms part of the "Enzylopaedie der Klinischen Medizin" edited by Langstein, von Noorden, Pirquet and Schittenhelm It is a comprehensive treatise on the various methods of blood examination, including among other subjects the various methods of estimating hemoglobin, methods for counting the different cellular elements, estimation of the amount of blood, viscosity of blood, determination of coagulation time of the blood, resistance of the red cells, estimation of the volume of the cells and the serum, determination of the dry residue of the blood, estimation of the amount of protein bodies, determination of the freezing point and the electric conductivity, estimation of the reaction of the blood and the hydrogen-ion concentration of the blood, an extensive discussion of the morphologic examination of the blood by means of native and stained preparations, examination of the hematopoietic organs, and methods for general cytodiagnosis No attention, however is paid to the newer phases of blood chemistry, which are assuming so much importance in clinical medicine While much space is devoted to a discussion of the electrometric methods of determining the H-ion concentration of the blood, no mention is made of the clinically important indicator methods, which have been so fully elaborated by our own American workers The text is clear, the illustrations are adequate, and the methods discussed are those that are well recognized and have stood the test of time In the discussion of these methods, special attention is paid to matters of technic, and the various pitfalls are pointed out into which the worker may fall in following the method and interpreting his results A rather extensive bibliography at the end of the book gives it increased value as a work of reference This work should find a place in reference libraries, and is especially recommended to those workers in clinical or hospital laboratories who have frequent occasion to look up some method outside their daily routine

RATIONAL TREATMENT OF PULMONARY TUBERCULOSIS By Charles Sabourin M D Medical Director of the Durtol Sanatorium Puy-de Dome France Sixth edition Cloth Price, $3 50 net Pp 440 Philadelphia F A Davis Company, 1921

This book contains so much "orthodox" matter and so much that is open to criticism that it is difficult to classify In addition, it seems unnecessarily prolix The author aims to provide a therapeutic guide to the treatment of tuberculosis Here he treads on debatable ground It is evident that he is possessed of large experience in the care of the tuberculous It is likely, however, that the American student of tuberculosis will object to many recommendations made by the author For instance, he may take exception to the chapter which devotes much space to the consideration of creosote, cod's oil, phosphorus and tannin, while the rather loose rest treatment will likewise call forth his objections The statement (p 96) that the author "is convinced of the uselessness of immobilizing in bed, patients who are afebrile in the morning hours even though they have pronounced fever in the afternoon" will certainly call forth criticism It is startling to read that, for cough, the patient is permitted to carry with him a box of opium pills (p 227) One doubts whether the American practitioner will follow the author's advice to treat hemorrhage by the 'administration of ipecac in emetic doses" The author is director of a French sanatorium which, we take it ,cares for the well-to-do , and it is evident that he has had his troubles in dealing with intractable patients He goes into some rather illuminating details in this connection It is to be regretted that the many sound statements are somewhat beclouded by less reliable matter The book is worth reading by those who are well grounded in their knowledge of tuberculosis

GRAPHIC METHODS IN HEART DISEASE By John Hay M D F R C P with an Introduction by Sir James Mackenzie M D F R C P Cloth Price $5 00 Pp 178 with 176 illustrations New York Oxford University Press 1921

Since 1909, when Hay first published his small volume on Graphic Methods in Heart Disease much has been learned of the mechanism of the normal and abnormal heart beat These additions to our knowledge are critically incorporated into this second edition The book in reality is concerned almost exclusively with the discussion of the polygraph and its application in clinical medicine We are familiar with no clearer, more satisfying treatment of this topic than Hay While the electrocardiograph has largely displaced the polygraph as an instrument of precision in investigative work and in the hospital, the latter instrument, because of its smaller cost and its portability may still be regarded as of practical value and not merely of historical interest Hay's book is, therefore, far from out of date He has added a condensed chapter on the electrocardiograph, with good illustrative tracings In fact all of the illustrations are excellent and helpful

PSYCHOLOGY AND PSYCHOTHERAPY By William Brown M A M D D Sc Reader in Psychology in the University of London (King's College) With a Foreword by William Aldren Turner C B M D Cloth Price $3 Pp 196 New York Longmans Green & Co 1921

This is the latest and one of the best of books on the subject published in England since the war Like the others it is a product of war experience, and like the others it shows evidence of immaturity, but it also shows evidence of honest, earnest effort To see an author approach his subject with an open mind and without prejudice is always refreshing, and is generally profitable for the reader The psychology of Dr Brown's book is the psychology forced upon him by an extensive and varied experience with the psychoneuroses of war, and the psychotherapy is such as he found useful Not

that he ignores the work of others He has consulted practically all schools, gives a very good summary of their ideas, and makes a consistent attempt to be eclectic To the psychanalysts he gives more than one third of the book, and considerable credit, but is far from being a Freudian He unreservedly endorses Janet's teaching on dissociation, and he believes in the usefulness of free association, but he uses hypnotism a lot, and is convinced of the efficacy of *Abreaction* or psychocatharsis For old and refractory cases, however, he recommends the persuasion method of Dubois calling it autognosis That is he strives to give the patient insight into his condition The digest of the subject is good, the cases are interesting and instructive and the advice is reasonable A few of the statements are a bit absurd, and a few others must be taken with a grain of salt, but the book will be very useful for any practitioner interested in the subject—and every practitioner should be

NOTIONS PRATIQUES D'ÉLECTROTHÉRAPIE APPLIQUÉE A L'UROLOGIE Par le Docteur Denis Courtade Chef de Laboratoire a la Faculte de Medecine Preface de Monsieur le Professeur Legueu Second edition Paper Price 18 francs Pp 244 Paris E Le François 1921

In this treatise galvanic and faradic currents and static electricity are defined and the modern conceptions of this form of energy are thoroughly elucidated Then follows a dissertation on high frequency currents This division, dealing with the physics of electricity seems to be the best part of the book Less praise is due the therapeutic chapters There is hardly a pathologic condition of the genito-urinary tract for the treatment of which electrotherapy of some form is not here recommended and explained If the results obtained by the author keep step with his enthusiasm which is certainly not shared by the majority of American urologists, he is accomplishing more than any one of his confreres Neuralgias of the urinary tract and functional disorders all are the subject of electric treatment Pollakiuria nocturnal enuresis and spermatorrhea form, in the author's opinion also grateful fields for electric treatment Even cystitis is treated by electricity the author recommending the obsolete method of trying to force medicated solutions into the vesical wall by means of the electric current Electrolysis, so long discarded is again suggested for the treatment of urethral strictures The most important branch of electrotherapy in urologic surgery—fulguration and electrocoagulation of vesical tumors—is only scantily dealt with, and instructive illustrations illuminating this interference, now practiced everywhere, are missing

SYPHILIS UND NERVENSYSTEM Ein Handbuch in zwanzig Vorlesungen fur praktische Aerzte Neurologen und Syphilidologen Von Dr Max Nonne Oberarzt am Allgemeinen Krankenhaus Hamburg Eppendorf Fourth edition Paper Price 360 marks Pp 1019 with 169 illustrations Berlin S Karger 1921

The fourth and enlarged edition of this standard and authoritative work retains the form of twenty clinical lectures, each of which, however has been expanded into a comprehensive monograph While essentially using his own huge material as a base, the author refers also extensively and impartially to the literature of many lands It is the most complete work dealing with the pathology, symptomatology and diagnosis of the syphilitic diseases of the nervous system. Only one lecture of eighty pages is given to prophylaxis and treatment As regards the latter, the author goes into less detail and is more noncommittal than his colleague, Professor Gennerich of Kiel, whose monograph on the same subject was recently reviewed in THE JOURNAL (May 28, p 1522)

EYE EAR NOSE AND THROAT NURSING By A Edward Davis A M M D Professor of Diseases of the Eye in the New York Post Graduate Medical School and Hospital and Beaman Douglass, M D Professor of Diseases of the Nose and Throat in the New York Post Graduate Medical School and Hospital Second edition Cloth Price $2 50 net Pp 346 with 32 illustrations Philadelphia F A Davis Company 1920

This is a second and revised edition of a very practical and useful manual for the use of nurses and students No doubt it has been of greater use to teachers of nurses than to the nurses for the reason that it is unnecessarily technical, especially in the chapters on the anatomy of the eye In many ways it well illustrates the great difficulty of simplifying technical matters for the laity Barring this fault, however the book is to be generally commended There are excellent chapters on contagious diseases of the eye, remedies used in ophthalmology and their application, operations on the eye and the after-nursing of surgical cases, what to do in emergency etc The same criticisms and the same commendations apply to that portion of the work devoted to the ear, nose and throat The press work is excellent, but the illustrations are not clear—and an illustration which does not illustrate is valueless

THE SOUTHERN HIGHLANDER AND HIS HOMELAND By John C Campbell Secretary Southern Highland Division Russell Sage Foundation Cloth Price $3 50 net Pp 405 with illustrations New York Russell Sage Foundation 1921

For twenty-five years Mr Campbell was a resident of the region about which he writes, serving as a teacher in three different southern highland institutions Recently he has been secretary of the division of the Russell Sage Foundation which has been making a study of the people of that district His account is a first-hand description of the growth and development of a section of the country which is peculiarly individual He describes a population which is as essentially American as the present descendants of the Pilgrim fathers, a population which has kept a pure stock through close intermarriage Because of the individuality of the people discussed the story is interesting The anthropologic analysis the geographic and ethnologic studies are freely interspersed with anecdote, examples of language, ballad and custom There are numerous maps and illustrations Appended to the work are statistical tables and an excellent bibliography

KYSTOSKOPISCHER ATLAS Ein Lehrbuch für Studierende und Aerzte Von Dr med Erich Wossidlo Paper Price 56 marks Pp 80, with 57 illustrations Leipsic Wilhelm Englemann 1921

This book begins with a clear exposition of the principles governing modern cystoscopy, and a description of the leading types of instruments used Then follows a chapter dealing with the execution of this examination and a discussion of ureteral catheterization In continuation, the entire pathology of the urinary bladder is outlined, and many useful therapeutic hints are interspersed But most valuable are the illustrations In thirty-four pages, each containing five or six colored plates, the author demonstrates every known pathologic picture of the interior of the bladder except bilharziasis and syphilis of this viscus The pictures are quite true to nature The legends explaining the pictures are concise and clear and inserted opposite to each plate A publication of this kind is a source of joy to the expert and a treasure to the student

MASSAGE AND THERAPEUTIC EXERCISE By Mary McMillan Cloth Price $2.25 Pp 274 with 72 illustrations Philadelphia W B Saunders Company 1921

This is a small but satisfactory introduction to mechanotherapy with references here and there to the use of hydrotherapy and electrotherapy, without discussion however, of the technic of the two branches of physical therapy last mentioned The book has been written for the use of students of massage and gymnastics and the author believes that a course such as outlined in the book, together with practical work might provide many a woman with an introduction into a new field of service, which may become a new profession for women as important as the nursing profession To physicians who desire to become somewhat familiar with this form of therapy this little book may be recommended

LEITFADEN DER NEUROLOGISCHEN DIAGNOSTIK Eine Differentialdiagnose aus dem fuhrenden Symptom fur praktische Aerzte und Studierende Von Dr Kurt Singer Nervenarzt in Berlin Neurologischer Fachbeirat beim Hauptversorgungsamt Paper Price, 45 marks Pp 201 with 33 illustrations Berlin Urban & Schwarzenberg 1921

This book is a compend on diagnosis, and the subject is approached from the standpoint of symptoms The first chapter is on paralysis, the second on sensory disturbances, the third on muscular atrophy, and so it continues through eighteen chapters The matter is quite up to the average, but many statements are extremely dogmatic The book is fairly typical of its class and represents another attempt at a short cut through difficult territory

Medicolegal

One May Be an Expert Without Being a Specialist

(Braunie v State (Neb), 180 N W R 567)

The Supreme Court of Nebraska holds that a physician in general practice, who has had experience in cases of insanity, *may be entitled to testify as an expert on the question of* insanity although he is not a specialist in nervous diseases and testifies that he is not an expert on insanity The court says that in this homicide case, wherein the defendant pleaded insanity one physician, called by the state, testified that he was a graduate of a regular medical school, had been licensed to practice, and had been engaged in regular practice for thirty-four years, that he had had experience in insanity cases and was, in fact, serving as medical examiner on the county insanity board, but he stated that he was not an expert on insanity matters This witness, over the defendant's objection as to his qualifications, was allowed to give expert testimony on the question of the defendant's sanity Such testimony was not improperly received It is the function of the court to determine the qualifications of a witness, offered as an expert, from the showing of fact as to the study made and knowledge acquired by the witness on the particular matter in question The conclusion of a witness as to whether or not he is an expert is not binding on the court It is apparent, in this case, that what the witness intended to convey by his assertion that he was not an expert was that he was not a specialist in matters of insanity It was, however, not necessary that he be a specialist If it appears to the court that the witness has had an opportunity to make special study and has done so and has thus acquired knowledge and has had experience in reference to the matter beyond that of ordinary persons, he may be allowed to testify as an expert The extent, then, of such knowledge and experience, bears on the weight to be given to his testimony by the jury

Murder or Manslaughter in Death from Abortion

(Lee State (Miss) 86 So R 856)

The Supreme Court of Mississippi, Division A, in affirming a conviction of manslaughter, says that the indictment was in the language of Section 1431 of the Code of 1906, and alleged simply that defendant Lee "did feloniously kill and slay the deceased," describing her by name The death of the woman was caused by a surgical operation performed on her for the purpose of producing an abortion The jury was warranted in believing from the evidence that the operation was performed by the defendant, a physician and surgeon, with the woman's consent for the purpose of relieving her of a fetus which had not become quick No necessity for relieving her of the fetus was shown or claimed The defendant's conviction must, of course, rest either on a statute of the state or on the common law, and the defendant contended that it could rest only on Section 1232 or Section 1233 of the Code of 1906, which provide that "the killing of a human being without malice, by an act, procurement, or culpable negligence of another, while such other is engaged in the perpetration of" any misdemeanor or certain felonies, is manslaughter, and that it did not come within the terms of either for the reason that producing an abortion with the woman's consent before the fetus had become quick was not a crime either at common law or under any statute of the state of Mississippi But while it was true that the production of such an abortion is not prohibited by any statute of Mississippi and the authorities are in conflict as to whether or not it is a crime at common law, the defendant's guilt did not depend on either of these statutes, or on the criminality of such an operation, for under all the authorities if an abortion results in the death of the woman it is, at common law, either murder or manslaughter without reference to the state of the fetus or the criminality of the abortion itself, for the reason that producing an abortion is a deliberate act, dangerous to life and involving great bodily harm If the act by which an abortion resulting in the death of the woman is produced is eminently dangerous to, and evinces a depraved heart regardless of human life, the crime committed will be murder under the provisions of Section 1227 of the code, but if it does not evince a depraved heart regardless of human life, the crime committed will be manslaughter under Section 1244, which provides that "every other killing of a human being, by the act, procurement, or culpable negligence of another, and without authority of law, not provided for in this chapter, shall be manslaughter" The crime here under consideration came within the second of these classes No witness testified to having seen the defendant perform the operation, and he himself denied having performed it, but the verdict of the jury was on the evidence clearly right In short, the court holds that a person producing an abortion solely for the purpose of relieving the woman of the child which results in her death, though produced with her consent, is guilty of either murder or manslaughter, regardless of whether the child with which the woman was pregnant was quick, of "murder," under Section 1227 of the code, if the act by which the abortion was produced is eminently dangerous to, or evinces a depraved heart regardless of, human life, "manslaughter," under Section 1244, if the act by which the abortion was produced is not eminently dangerous to and does not evince a depraved heart, regardless of human life

Time Limit to Beginning Actions for Malpractice

(Ericson v Charles (Kan) 194 Pac R 652)

The Supreme Court of Kansas says that in one count the plaintiff alleged, in substance, that the defendant agreed to perform an operation on her in order to relieve her from an obstruction of the bowels, and to give her the necessary treatment following the operation, for $100, and it was also agreed that he would not remove her vermiform appendix, uterus and ovaries, or perform any other operation on them, but that, when she submitted to the operation, in violation of his agreement he removed the appendix, and stitched the uterus to the walls of the abdomen in a manner not in accordance with the custom and practice of good and prudent surgeons causing her to suffer great injury and pain, for which she asked judgment in the sum of $5,468 44 In a second count the plaintiff set out the facts substantially as in the first, except that no mention was made of an employment or of an agreement as to the manner or extent of the operation, but it was alleged that the defendant, in disregard of his obligation and duties as a surgeon to perform the operation in a manner becoming a good, reputable and ordinarily prudent surgeon, had removed the appendix, which was in a good, healthy condition, and had stitched the uterus to the wall of the abdomen, contrary to the custom and practice followed by good surgeons, and further, that the operation on the obstruction of the bowels, the ailment for which the plaintiff underwent the operation, was not properly done and afforded only partial relief Following this were the same allegations as to the pain, mental anguish and injury which resulted from the operation as performed, with prayer for judgment, as in the first count The action was brought more than two years after the cause of action accrued, but less than three years after that time A demurrer to the first count was overruled on the theory that the cause of action alleged was one arising on contract, to which the three-year statute of limitations of Kansas applied But what was treated as a demurrer to the second count was sustained on the ground that that count stated a cause of action sounding in tort and was barred by the two-year statute of limitations The plaintiff insisted that when the defendant undertook to perform the operation an implied obligation arose on his part that he would use reasonable skill and care in its performance and on her part that she would pay him the reasonable value of his services She therefore contended that she was entitled to, and in her pleading did, waive the tort and sue on what she called the implied contract in the transaction But there was no averment in the second count of an agreement between the plaintiff and the defendant, nor even of employment It was alleged in effect that he performed the operation, but that it was negligently and unskilfully done In this count, the

plaintiff set up no more than the violation of duty and the wrong of the defendant It is true that in certain cases wherein the defendant derives a benefit from a tortious act the plaintiff may waive the tort and sue on the implied contract of the defendant to pay for property taken or benefit derived by him Here, however, the averments in the count were those stated in an ordinary petition for malpractice and were such as to characterize it as an action ex delicto, or for a wrongful act Having pleaded an express contract in the first count, the plaintiff was hardly in a position to plead a contract implied by law as the existence of an express agreement precludes the idea of the existence of an implied one In other words an action for malpractice in which is alleged in substance that the defendant, in disregard of his obligations as a surgeon, performed an operation on the plaintiff in a negligent manner and not in accordance with the custom and practice followed by good, reputable and prudent surgeons, with a result that the plaintiff suffered great pain and injury, for which she asks damages, is one arising on tort, and not on contract and the statutory limitation of two years applies to such action

Society Proceedings

COMING MEETINGS

American Electro Therapeutic Association Washington D C Sept 7 10
Delaware State Medical Society Rehoboth Aug 16
Colorado Congress of Ophthalmology and Oto-Laryngology Denver July 29 30
Colorado State Medical Society Pueblo Sept 6 8
Minnesota State Medical Association Duluth Aug 24 26
Wisconsin State Medical Society of, Milwaukee, Sept 7 9

AMERICAN PEDIATRIC SOCIETY

Thirty Third Annual Meeting held in Swampscott Mass June 2 4 1921

The President, DR JOHN HOWLAND, Baltimore in the Chair

Prolonged Intolerance to Carbohydrates

DR. JOHN HOWLAND, Baltimore In cases of prolonged intolerance to carbohydrates which perpetuates diarrhea it is apparently the sugar and not the fat that is responsible. The first indication in treatment is to reduce the sugar to its lowest limits in a food which furnishes the other requirements for adequate nutrition Nothing can compare with protein milk in this respect It allows the presence of fat protein and salts with a minimum of disturbing sugar, and it furnishes the substances necessary for the formation of insoluble soaps Carbohydrates must be withheld for a long time. A polysaccharid, such as farina, is not only at times well borne but may even have a marked constipating effect Young infants will not usually tolerate this but in the case of older infants it may be strikingly successful In another condition, commonly known as chronic indigestion or intestinal infantilism of Herter, it has been found that of all the elements of food, carbohydrate is the one that must be excluded most rigorously In this class of cases the diet may consist of (1) protein milk alone continued until the stools are firm, distention is very slight, gas is not in excess and the appetite is good, (2) protein milk as a basis reinforced by almost pure protein foods, such as curds without whey, scraped meat, certain forms of cheese, egg white and eventually whole egg The duration of this stage may be many months, even years This is not an ideal diet, but it is an adequate diet (3) Carbohydrates added gradually Bread potato and cereals are the last articles that can be allowed

Blood Studies in the New-Born

DRS W P LUCAS, B F DEARING H R HOOBLER et al, San Francisco The blood obtained a few hours after birth to the fourteenth day postpartum was studied in 150 infants The hemoglobin was high at birth that of the sinus blood tending to be higher than that of the peripheral blood The red blood cells were high during the first week and then gradually decreased corresponding closely with the decrease in hemoglobin The same leukocytosis was observed as has been noted by other observers, though it was by no means constant The leukocytosis during the first week was definitely due to the polymorphonuclears, this continued to be so until the seventh day, when the polymorphonuclears gradually declined, reaching the same level as the lymphocytes on this day The lymphocytes gradually increased and were still increasing at the close of these observations on the twelfth day There was slight increase in the transitional cells which, toward the end of the period of observation, decreased slightly The same was true of the eosinophils These counts in the sinus blood again showed a slight increase over those of the peripheral blood The platelet count during the first eight days corresponded very nearly to those of Dr Mary E Morse During the period of prolonged coagulation time the serum bilirubin curve was also increased, but it did not seem to affect the coagulation time in cases of marked jaundice During the time that the coagulation time was prolonged, the prothrombin factor was definitely diminished After the fourth day the prothrombin factor apparently reached normal levels, though it might be delayed several days longer The blood clot of the new-born did not seem to show any defect in retractility of the clot, and there was no fibrinolysis *This was exactly the condition* that existed in hemophilia One might conclude, that the factor involved in the ordinary case of hemorrhage in the new-born was a diminution in the prothrombin element, which is mainly derived from the platelets We have not been able to show urobilin in the stools of new-born infants during the first twelve days of life, or in infants up to 10 weeks of age, although in older children it is easy to demonstrate its presence Ninety cases were examined for bilirubin by a method which we propose, and of these seventy-two showed a positive reaction

DISCUSSION

DR ALFRED F HESS, New York The most remarkable thing about this study is the prolonged coagulation time In other words, these infants have latent hemophilia These figures make us wonder that we do not get hemorrhage in the new-born more often

DR FRITZ B TALBOT, Boston The blood sugar studies are interesting compared with the respiratory quotient The blood sugar is low at birth and rises on the third day, and this is consistent with the respiratory quotient, which goes down immediately after birth and on the third day begins to rise The figures for sugar in this study are low, compared with those of Folin

Care of Premature Babies

DR. WALTER LESTER CARR, New York The incubator room at the Manhattan Maternity is 6½ by 7 feet, with a ceiling 12 feet high and a single door The air intake is by a flue which passes back of a radiator The room temperature is kept at 80 F The incubator is an aluminum tray with a hood which does not extend the entire length of the tray but allows the baby's head to be out of the hood Over this open end there is a curtain to protect the baby's head In the top of the incubator are three openings for electric lights placed on elbows so as not to interfere with the clothing One 15 watt light gives the incubator a temperature of 76 F two lights raise the temperature to 88 F, and three lights raise it to 96 F in forty-five minutes A moderate temperature is better than a high one Breast milk should be given if it can be obtained, it should be drawn from the mother or wetnurse, diluted with equal parts of 5 per cent lactose solution and fed with a medicine dropper or a Breck feeder Premature babies do not bar high fat Water must be given freely The feeding interval should be about two hours and the amount given should not exceed 1 or 2 drams each time Whenever possible, feeding should be done without removing the baby from the incubator Sucrose is given to babies who have a persistently low temperature, and it apparently helps in heat production The caloric requirements of the premature baby are high. Gavage, lavage and hypodermoclysis are sometimes employed The administration of fluid through the longitudinal sinus is not a safe means of combating loss of weight The average

time the incubator babies were kept in the hospital was 36 8 days The routine was to keep the babies in the hospital until they weighed about 4 pounds Premature babies are prone to be rachitic Three of five babies fed on Dryco showed rickets

DISCUSSION

DR H D CHAPIN, New York In the care of premature babies two things are of importance, the temperature of the incubator and the food, and of these the food is the more important In my experience with several hundred incubator babies I have never been able to raise one without breast milk

DR ISAAC A ABT, Chicago Ordinarily the temperatures of incubators are too high These babies do not need a temperature of 80 degrees, a little above 75 F is enough

DR L E LAFETRA, New York A temperature of 76 F is best as it permits the air to be kept moist If the temperature is higher the air becomes too dry Breast milk is desirable, but when it cannot be obtained, modified milk which has been peptonized may be used Its use is often attended with success

DR FRITZ B TALBOT, Boston The basal metabolism figures are important The premature baby falls into the class of cold blooded animals The temperature is dependent on the rate of the metabolic processes When the temperature is subnormal, the basal metabolism is subnormal Babies having a subnormal temperature do not gain until the temperature becomes normal, and when they begin to gain the temperature becomes normal and the metabolism goes up

DR J P CROZER GRIFFITH, Philadelphia We have been using an asbestos incubator with the lights below Premature babies must be kept warm

Malnutrition in Children of the Well-to-Do

DRS CHARLES GILMORE KERLEY, EDWARD J LORENZA, JR, and ROGER DUBOSE, New York In the majority of these cases two features stand out prominently, namely, deficient food intake or imperfect digestion In one group are those cases in which there is a maladjustment of the different food elements Usually butter, cream and 4 per cent milk fat have been crowded The essential foods are taken indifferently In the management of these children the fact must be recognized that there must be a healthy desire for food and this is created by the withdrawal of fats and sugars in large measure Three meals are given daily, at five hour intervals, and nothing but water is allowed between meals A low fat and sugar diet is given, and skimmed milk, from 16 to 20 ounces only, is allowed In a second group, hyperacidity of the stomach juices causes defective food intake The chief symptom of hyperacidity is a lack of desire for food In cases of long standing, nausea and vomiting are prominent symptoms Among the etiologic factors in this group are candy, ice cream, irregularity in meal hours, and faulty feeding This type of patient usually responds to dietetic treatment Extremes as regards temperature of foods and drink are to be avoided Condiments, candy, pastry and raw fruits are excluded A powder consisting of sodium bicarbonate, 2 grains, bismuth subnitrate, 2 grains, and magnesium carbonate, is given fifteen minutes before meals A third group of cases is that in which defective intestinal mechanics delay stomach emptying One usually finds defective food intake and poor appetite in those who show a stomach residue after four and one-half hours In order for a child to have a normal desire for food, there must be an interdigestive period of one hour Retention is often due to pylorospasm occasioned by an anomaly or lesion lower down in the intestinal tract It is impossible to outline a plan of treatment that will suit all these cases In the ptosis cases a snug-fitting abdominal belt with a pad or projecting shelf is worn for months In cases of dilated cecum, massage and liquid petrolatum have been employed successfully A fourth group, comparatively small, contains the greatest number of failures These are the underweight, overactive, anemic, physically retarded, precocious children that one sees only occasionally before the third year In 125 of these cases with varying degrees of malnutrition I have used yeast Analysis of the histories fails to show that it has been of any benefit In fact, the administration of yeast was attended by no signal success in any of the four groups of cases Likewise, endocrine therapy, with the exception of the use of thyroid in the cretin, has been unsatisfactory A large majority of our cases of faulty development relate to food intake and utilization For success in management we must supply the requirements

DISCUSSION

DR L EMMETT HOLT, New York Heretofore most of our attention has been directed to the quality of food, but quantity must also be considered When the child has never been hungry I instruct that if he does not eat the food placed before him it shall be taken away and that he shall have nothing to eat until the next meal time When a child finds that if he does not eat his food it will be taken away, he soon learns to take it

DR H D CHAPIN, New York Dr Kerley is one of the first to report results from the use of yeast The newspapers are advertising yeast and advising people to eat it Whatever we say about it will have some good effect on these advertisers

DR LANGLEY PORTER San Francisco If these children are put to bed and given proper rest they often improve quickly It is astonishing what a change of nurses will sometimes do A nurse skilled in the psychology of childhood, often will in a few days, without change of diet, get the child well

DR ISAAC A ABT, Chicago We have been using large doses of calcium phosphate and lactate and have obtained some good results

Pneumococcus Peritonitis in Infancy and Childhood

DR HENRY HEIMAN, New York During five years, 125 cases of genuine peritonitis were admitted to the children's wards at Mount Sinai Hospital, and the pneumococcus was present in only fifteen It was Type I in five cases, Type II in one case, Type III in no case, and Type IV in three cases In five out of eight cases the blood cultures were positive for pneumococcus A high leukocyte count is characteristic The course of the disease is divided into three phases (1) Sudden onset with severe abdominal pain, usually generalized, but most marked in the lower right quadrant, rise in temperature, rapid pulse and prostration The degree of abdominal rigidity is not as marked as in other forms of peritonitis Signs of fluid are not often elicited (2) In this phase the condition improves (3) This stage is characterized by the presence of a circumscribed mass in the abdomen, usually in the umbilical or hypogastric region The temperature rise becomes intermittent and the patient gradually loses strength from the toxemia Death ensues from toxemia, or recovery may follow spontaneous rupture through the abdominal wall, or operation At Dr Howard Lilienthal's suggestion, abdominal aspiration was done in all suspicious cases The point of preference for puncture is 1 inch below and 1 inch to the left of the umbilicus, this penetrates an area over the small intestine only The prognosis depends on the localization of the inflammatory process and the involvement of other organs We have injected antipneumococcus serum intensively in four cases without avail The best treatment is to give an abundance of fluid by hyperdermoclysis and proctoclysis, and to keep the patient under the influence of opium during the acute onset of the diffuse process If toxemia tends to lessen, it is advisable to wait for abscess formation before opening the abdomen If, however, under supportive treatment no signs of improvement appear, it is best to resort to surgery

DR L EMMETT HOLT, New York One type of pneumococcus peritonitis occurs in those cases in young infants in which the peritonitis is a part of a general pneumonitis Frequently it gives no symptoms and is found only at necropsy It is a question not yet settled whether these children should be subjected to operation

DR ISAAC A ABT, Chicago These cases usually run a malignant course and are difficult to differentiate from appendicitis A peculiar condition may occur during the course of a pneumococcus peritonitis The disease starts

with a stormy onset After two or three days of high fever and great toxemia, the patient lapses into a calm, semicomatose state that reminds one of the condition one sees when an appendix has ruptured The patient remains in that state for a day or two, rapidly gets worse, and dies An exploratory operation may be justified in these cases

DR CHARLES G KERLEY, New York I have seen quite a number of cases of pneumococcus peritonitis, all of the fulminating type One of my patients developed a paralytic ileus and died within three days

DR P J CROZER GRIFFITH, Philadelphia It is better not to operate until you find whether the trouble is in the abdominal cavity I know of patients operated on early who died

Diet in Infancy, Czerny and Kleinschmidt Butter-Flour Mixture

DR J P CROZER GRIFFITH, Philadelphia Czerny and Kleinschmidt devised a food which permits the employment of a high fat percentage in combination with a high percentage of carbohydrates, but with the protein reduced to approximately that of human milk They insist on the importance of having the ratio of fat and carbohydrate a fixed one The proportions recommended by them consist of 7 gm of butter, 7 gm of flour, 5 gm sugar and 100 c c of water, to be mixed with varying amounts of milk, according to the age of the patient The butter is placed in a pan and heated gently over a gentle fire until foaming takes place and until any odor of volatile fatty acids has disappeared This requires from five to eight minutes Fine wheat flour is then added The whole is boiled and rubbed through a fine sieve, and then mixed with the desired amount of previously boiled cooled milk and the whole kept cool until needed For children under 3,000 gm in weight, one-third milk is added to two-thirds butter-flour mixture, for those 3 000 gm or over, two-fifths milk and three-fifths butter-flour mixture Children fed by this method resemble healthy breast fed children The results were particularly fine in weakly and premature infants weighing less than 3 000 gm

DR. A. GRAEME MITCHELL, Philadelphia It is important to follow the formula closely In whatever way the mixture is modified, the amounts of butter and flour remain equal In certain cases it is an advantage to reduce the amounts of butter to less than 20 gm each to 300 c c of water In some cases the sugar should be decreased in amount or omitted entirely The mixture may be used for substitute or complementary feedings The mixture containing two-thirds of the stock solution and one-third milk may be said to represent fat, 4 6 per cent , carbohydrate, 8.2 per cent , protein, 1 5 per cent, with a caloric of 24 6 to the fluidounce The fat of the stock solution consists entirely of neutral fat, the fatty acids having been eliminated This mixture, like other foods, has its indications and contraindications, and success in feeding depends on the proper selection of cases The food should be given cautiously if at all, to infants suffering from infantile atrophy Some cases that one does not expect to respond favorably nevertheless do so In analyzing the histories of the infants that failed to gain on the butter-flour mixture, it was found that in seven the type of feeding was not responsible for the failure The two great lessons which the study teaches are that (1) when fed with butter-flour infants may tolerate fat in a manner which can be accomplished probably by no other means known to us, and (2) the remarkable results which so often follow are a strong proof of the great need which the infant's anatomy possesses for a food containing a sufficiently large amount of fat

DISCUSSION

DR CHARLES G KERLEY, New York This method appears to have been very successful We should follow it up It is a rather involved proposition, however, to put into the average family, and it seems to me that we are striving unnecessarily for new procedures We are using too many proprietary preparations and too much Dryco These things are being used by men too lazy to study up the suitable formula for the individual child

DR. OSCAR M SCHLOSS, New York I have used the butter-flour mixture and have had the identical experience that Dr Griffith and Dr Mitchell report I think that many babies do much better on this mixture than when fed by the routine methods The babies do much better than when the same amount of fat is given in an ordinary formula

DR HENRY D CHAPIN, New York There is a tendency to cut fats off too much Years ago it was all high fats, now it is low fats or no fats I think one reason for this is the caloric estimate of food requirements The different food elements are not interchangeable, particularly in early life

DR L EMMETT HOLT, New York One element in this formula makes it evident that it is not adapted for long use I cannot conceive of a child thriving on such a low protein diet for a long time I think that the failure of condensed milk and of the dry milk preparations is due to their low protein content One cannot insist too strongly that these unbalanced formulas are not suited to permanent use

DR ALFRED F HESS, New York The diets which the babies do best on in the infant asylum is Schluss milk, which is made of 160 c c of cream and 160 c c of milk to the liter, with a certain amount of flour and sugar It is similar to this, except that in this mixture the fatty acids are driven off On this diet not only do the children thrive, but the texture of the skin and muscles is much better than that of the average bottle fed baby The mixture we use seems to work in spite of the fact that it contains fatty acids

DR J CLAXTON GITTINGS, Philadelphia It does not seem rational to reduce the percentage of volatile fatty acids I have had a gain in weight when the volatile fatty acids were present in the food that I did not get in any other way

DR J P CROZER GRIFFITH, Philadelphia Twenty-five men who have used this mixture admit that the results are surprisingly good, and they are better than I have seen with any other method It is not a new mixture, it was used long before physicians tool it up I am a percentage feeder but I think there is a great deal more involved in this method than simply percentages It is not meant for temporary feeding, but for prolonged feeding I have followed out this method of feeding long enough to be convinced of its advantages

DR A GRAEME MITCHELL, Philadelphia This is a percentage method It simply means a way to get the infant to take more fat I cannot say that it is a food to be used indefinitely If you search the stools you find no fatty acids It is simply a method that helps those infants that do not get along well on cow's milk mixtures, and it may be true that it can be used indefinitely

Use of Thick Cereal Mixtures in Difficult Feeding Cases

DR HENRY D CHAPIN, New York Observations were made on twenty infants with obstinate indigestion which had resulted in distinct malnutrition and pointed to the hopeless marasmus which finally resists all aid Three mixtures were employed The first was composed of 4 ounces from one quart of milk 2 ounces of skimmed milk, 7 ounces of water, and 3 level tablespoonfuls of farina, with 1 level tablespoonful of granulated sugar The mixture was boiled one-half hour, and the children were given 3 ounces every four hours, and water alternately The second formula was similar to this except that it called for 15 ounces of skimmed milk and 6 ounces of water, and the baby was fed 3½ ounces every four hours The third formula called for 4 ounces of top milk from a quart of milk, 28 ounces of skimmed milk, 9 ounces of water 4½ level tablespoonsful of farina, 1 level tablespoonful of granulated sugar and 1 level tablespoonful of malt sugar From 4 to 6 ounces were fed every four hours, and water every four hours alternately When vomiting was a feature the thick cereal mixture did better than liquid food and were always tried first with a spoon They might be given by the bottle by enlarging the hole in the rubber nipple The effects of this feeding were occasionally uncertain usually good and sometimes remarkable Laboratory analysis of the stools shows that the percentage utilization of carbohydrates in these children is practically equal to that of normal children and adults

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Hygiene, Baltimore

May 1921, **1**, No 3

Physiology of Reproduction in Domestic Fowl XIV Influence of Free Choice of Food Materials on Winter Egg Production and Body Weight R Pearl and T E Fairchild Baltimore —p 253
Certain Minimums and Maximums in Tuberculosis Control D B Armstrong —p 278
Antipneumococcus Protective Substances in Normal Chicken Serum C G Bull and C M McKee Baltimore —p 284
Significance of Albumin and of Albumin with Casts in Urine L I Dublin New York —p 301
Toxic Substance Obtained by Growing Hemolytic Streptococci in a Special Medium L C Havens and M L Taylor, Baltimore —p 311
Life History of Vahlkampfia Patuxent N Sp, Parasitic in Oyster with Experiments Regarding Its Pathogenicity M J Hogue, Baltimore —p 321
Natural and Acquired Antisheep Hemolysins of Rabbit as Regards Thermolability R R Hyde Baltimore —p 346
Reactivation of Natural Hemolytic Antibody in Chicken Serum R R Hyde, Baltimore —p 358

Antipneumococcus Protective Substances—It is shown by Bull and McKee that the serum of normal chickens is capable of protecting mice and guinea-pigs against infection with pneumococci The protective substances are found in the water-insoluble fraction of the serum globulin Chicken serum contains particular protective substances for each serologic type of pneumococcus These substances are selectively removed from the serum by the process of bacterial adsorption In terms of the protective substances in chicken serum, Types II and II B pneumococci constitute two distinct main groups and Type II strains form a subgroup to both of them

Significance of Albumin and Casts in Urine—A study was undertaken by Dublin to determine, if possible, the importance of persistent albumin and of albumin with casts as a physical defect measured in terms of mortality It is based on the after-life history of about 5,200 persons who were rejected for insurance in the period between 1905 and 1915 So far as it was possible the study was limited to cases in which there were no other serious complications which are often found in connection with albuminuria The first group studied consisted of 2,073 persons who showed albumin on several examinations in amounts exceeding the slightest possible trace A total of 161 deaths occurred among them during this period This is the actual mortality According to Glover's table 141 deaths should have occurred among these people The actual deaths were, therefore, 114 per cent of the expected according to the table On the American men table, only eighty-eight deaths would have occurred as against 161 The actual mortality was, therefore, 183 per cent of that which might have been expected in a group of insured people at the same ages who were presumably free from serious defects It would appear, therefore, that the persistent presence of albumin in quantities above the slightest possible trace is a serious impairment Cases with albumin and casts numbered 3,264 persons with 452 deaths The death rate, therefore, was 20 5 per thousand for those having albumin only The seriousness of the presence of albumin with casts is reflected also in the death rates for the various diseases The mortality rate is high for virtually every important cause of death The cancer rate is twice as high, diabetes is almost three times as high, tuberculosis is over three times as high The extra mortality from this disease is not influenced so much by age as by the amount of albumin Apoplexy and cerebral hemorrhage give rates four times as high as in the ordinary experience, organic heart disease, over four times and Bright's disease, twelve times Over 40 per cent of the deaths of persons showing a large amount of albumin with casts at the ages over 40 were from Bright's disease and the death rate from this disease alone was 3,103 per hundred thousand These persons would, therefore, appear to have been at the time of examination already suffering from Bright's disease or well on the road to this condition The gravity of the impairment varies directly with the amount of albumin and not quite so regularly with the advancing age of the applicant The presence of casts adds materially to the gravity of the impairment and granular casts add more to the defects than do hyaline casts At the older ages, the presence of casts, together with albumin, is indicative of a condition of the greatest seriousness At the younger ages, the presence of a trace or more of albumin or of albumin with casts, suggests the existence of tuberculosis in many cases

Special Culture Medium for Hemolytic Streptococci—A special medium is described by Havens and Taylor in which a specific toxic substance has been produced during the growth of certain strains of hemolytic streptococci This toxic product is filtrable and the filtrates have a definite pathogenic action when injected into mice, rabbits and guinea-pigs The poison possesses definite antigenic properties and the serum of rabbits immunized with such toxic filtrates gives protection both against infection with the cultures and against intoxication with the filtrates The medium used consisted of 1 per cent peptone 1 per cent disodium phosphate and 0 5 or 1 per cent glucose added to an ordinary meat infusion made with distilled water, and the reaction adjusted to a p_H of from 8 0 to 8 2 The medium is tubed, about 10 c c. to a tube and autoclaved at ten pounds' pressure for ten minutes A fragment of sterile rabbit kidney and 1 c c of defibrinated sheep or rabbit blood are now put in each tube The medium is then ready for use and, to obtain the best results should be inoculated at once, without incubation to determine sterility In this medium the hemolytic streptococcus grows readily and abundantly

Natural Hemolysins—Hyde found that the natural hemolysins of the rabbit for sheep corpuscles are as heat resistant as the corresponding immune hemolysins The apparent difference in the thermolability of natural and immune hemolysins is due to the relative potency of the serum, the more potent serum apparently being more resistant to heat Hemolysins are just as resistant to heat when in salt solution as in undiluted serum

American Journal of Ophthalmology, Chicago

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American Journal of Public Health, Boston

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Phenol Coefficients F W Tilley Washington D C —p 513
Special Objectives of Physical Education with Relationships to Public Health C W Hetherington Sacramento Calif —p 520
Review of Our Knowledge of Bacterium Tularense C W Chapin, Washington D C —p 529
Comparison of Two Methods of Adjusting Hemolytic System for Use in the Complement Fixation Test for Syphilis H V Langworthy and F L Willson —p 532

The Family Doctor and the General Hospital in the Anti Tuberculosis Campaign I C Smith Washington D C —p 534
Conquest of Mosquito Borne Diseases C V Craster Newark N J —p 538

American Review of Tuberculosis, Baltimore

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Tuberculosis Rationale of Research G B Webb Colorado Springs Colo —p 271
Comparative Study of Pathology and Roentgen Ray Densities of Tuberculosis Lung Lesions H K Dunham and J H Shaylem Cincinnati —p 278
*Apical Pleuritis and Its Relationship to Pulmonary Tuberculosis Statistical Study of Stereoscopic Roentgenograms of 366 Consecutive Adult Chests J G Van Zwaluwenburg and G P Grabfield Ann Arbor Mich —p 323
*Tuberculous Empyema G B Kalb Monrovia Calif —p 339
Campaign Against Tuberculosis J M Anders Philadelphia —p 345
Are Eating Utensils Carriers of Tubercle Bacilli? H L Taylor St Paul —p 351

Relationship of Pulmonary Tuberculosis to Apical Pleuritis—Van Zwaluwenburg and Grabfield found that pleural shadows over the apices in various forms occur with great frequency By insensible gradations these shadows pass into those of frank pulmonary tuberculosis The demonstrated association with pulmonary tuberculosis demonstrates a prevailingly tuberculous nature Chronologically the apical pleuritis precedes the pulmonary involvement The prevailing tendency to spread is to the opposite apex and to the underlying lung The infection probably reaches the pleurae through the cervical lymphatics

Tuberculous Empyema—Ten cases are analyzed by Kalb Two of these patients were treated by thoracotomy and both died with their complication unbenefited In fact the end was hastened by the very means taken to cure them Of the seven remaining, all are alive and all have been relieved of their complication Two of these were what may be termed cases of spontaneous empyema and five occurred during the course of treatment by artificial pneumothorax The patients were all treated by the method instituted by Murphy All of the purulent material that is possible is removed by aspiration or siphonage or both combined using a large needle Then a 2 per cent solution of liquor formaldehyd in glycerin is injected the amount varying according to the amount of fluid withdrawn

Archives of Neurology and Psychiatry, Chicago

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*Sensory Changes in Subacute Combined Degeneration of Pernicious Anemia A S Hamilton and C E Nixon Minneapolis —p 1
*Myelitis and Myelomalacia P Bassoe and G B Hassin Chicago —p 32
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Sensory Changes in Pernicious Anemia—Changes in the nervous system Hamilton and Nixon state, occur in pernicious anemia in from 70 to 80 per cent of the patients as they present themselves in the ordinary physician's practice The frequency of these changes is ordinarily underestimated Subjective sensory disturbances constitute the earliest and most frequent evidence of involvement of the nervous system These with the objective signs also are often the earliest evidence of the development of pernicious anemia The most characteristic sensory findings are the relatively greater loss of deep as compared with superficial sensibility but there is by no means normal sensibility to touch prick and other forms of superficial sensibility Almost equally as characteristic as the change in deep sensibility is the complaint of subjective sensory disturbances There is a distinct lack of parallelism between the severity of the blood and nervous phenomena and either may precede the other by a long period of time Moreover, marked remissions in the blood picture, either with or without splenectomy, may fail to show a betterment in the sensory disturbances equal to that in the blood and may show none at all Contrary to the generally expressed opinion degenerative changes in the peripheral nerves are common in pernicious anemia and constitute an important part of the pathologic anatomy of that disease These changes in the peripheral nerves my serve to explain the disharmony between the sensory phenomena and the changes in the spinal cord existing in certain cases and in all cases have to do with the production of sensory disturbances, they are especially important in those cases in which marked remissions of sensory phenomena occur Vibration sensibility may be lost without loss of sense of passive joint movement and vice versa, and it is possible that the long fibers carrying these two forms of sensibility pass up the cord sufficiently separated so that beginning lesion in the posterior column may involve either one or the other alone at an early stage or, in accordance with Petren's view, it may be that the fibers subserving joint sensibility, at least, may pass up the cord in two pathways

Myelitis and Myelomalacia—A clinicopathologic study was made by Bassoe and Hassin, especially as to the fate of gitter cells In one of the cases recorded the morbid phenomena were most probably due to a pure inflammatory condition of the spinal cord myelitis, while the second case with the clinical picture of transverse myelitis was due to an extensive softening of the spinal cord with interesting histologic features The histopathologic findings in a typical case of so called "yellow" softening of the spinal cord, myelomalacia, are analogous to those found in acute softening of the brain encephalomalacia Myelomalacia, the authors claim, is not an inflammation but a degeneration of the spinal cord The degenerative or regressive nerve fiber changes are associated with progressive glia phenomena principally in the form of gitter cell formation The gitter cells in this as in any other type of secondary degeneration, are gliogenous formations Their task is to transform destroyed nerve tissue into fatlike substances and to transport these substances to mesodermic structures, such as blood vessels and the pia Reaching these structures they are actively taken up by the proliferating adventitial and pial elements From the adventitial and pial spaces they are carried to the subarachnoid space and thence to the blood for final elimination The subarachnoid space is to be looked on as the "dumping ground" for any waste accumulated in the central nervous system

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Cardiospasm with Dilatation of Esophagus—Snodgrass' patient aged 66, had had trouble in swallowing since he was 14 Food would stay in his esophagus several hours and then he would have to spit it out This continued without treatment for forty years Seven years ago, he had influenza and from that time he grew steadily worse in regard to his swallowing It required enormous pressure to force food into the stomach He found that he could eat practically a whole meal before swallowing it It would then be necessary for him to leave the table, throw his arms back, grasp something firmly take a drink of water, throw his head back and thus with enormous pressure, force the food into his stomach It would shoot in with a very audible whistling sound The esophagus, however was never entirely emptied and every morning he would throw out a large amount of food that had been taken the night before He had no particular distress after eating he never vomited His bowels were regular he had a slight brassy cough, no pain, was somewhat nervous and ill-nourished On giving him a bismuth meal it was found that no food passed into his stomach the esophagus was enormously dilated, was narrowed down by a small stricture in the region of the cardia about 1½ inches long and ⅛ inch wide By means of bougies and a hydrostatic dilator the stricture was gradually stretched so that normal function of the gastro-intestinal tract was secured

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Stasis Bile—The gallbladder and ducts exert opposite influences on the bile The ducts fail to concentrate and thicken it with mucus as the bladder does, but dilute it slightly with a thin secretion of their own that is colorless and devoid of cholates even when the organism is heavily jaundiced In obstructed ducts separated from the gallbladder, or connecting with one so changed pathologically that the concentrating faculty has been lost, such fluid gradually replaces the small amount of bile originally pent up It is the so-called "white bile" of surgeons When obstructed ducts connect with an approximately normal gallbladder the stasis fluid is entirely different, owing to the bladder activity At first there accumulates in quantity a true bile much inspissated by loss of fluid through the bladder wall, darkened by change in the pigment, and progressively thickened with bladder mucus As time passes, duct secretion mingles with the tarry accumulation and very gradually replaces it The inspissation of the bile, as indicated by the pigment content is at its greatest after only a day or two of stasis Rous and McMaster are convinced that the differing influences of the ducts and bladder on the bile must obviously have much to do with the site of origin of calculi and their clinical consequences The concentrating activity of the bladder cannot but be a potent element in the formation of stones The hemophilic bacteria of which *B influenzae* serves as a type Thjotta and Avery state require for their growth two distinct and separable substances, both of which are present in blood and neither of which alone suffices These substances are (*a*) a vitamin-like substance which can be extracted from red blood corpuscles from yeast and from vegetable cells, which is relatively heat-labile and absorbed from solution by certain agents (*b*) a so-called X substance which is present in red blood cells is heat-stable, and acts in minute amounts

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Resistance of Blood Cells—The resistance of the red cells to saponin solutions Neilson and Wheelon state varies in different diseases and this variation is intimately associated with alterations in the metabolism of cholesterol Pregnancy, pulmonary tuberculosis lead poisoning and cardiorenal diseases are associated usually with an increased resistance of the red cells to saponin Syphilis and anemia associated with syphilis and hemolytic jaundice show a lessened degree of resistance of the red cells to saponin Typhoid appears to alter but little the resistance of the red cells

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Case of Complete Traumatic Rupture of Kidney—Graves and Casper's patient sustained a rupture of the right kidney as the result of a fall down stairs After being picked up he complained of pain in his back and right side and soon fainted He was aroused in a few minutes and during the night complained of pain He could not urinate and a small amount of bloody urine was obtained by catheterization Patient was evidently in shock Physical examination showed dulness and marked tenderness over right loin at level of the third and fourth lumbar vertebrae There was general tenderness over his abdomen, no fluid in abdomen He had intense thirst since the accident and had been extremely restless He died about twenty-four hours after the accident The necropsy disclosed a complete transverse rupture of the right kidney

Paralysis Agitans, Sequel of Influenza—Moren's patient was 7 years of age Following an attack of influenza she developed paralysis agitans, the right side being involved to a greater extent than the left There was practically no tremor so long as she remained quiet, but on attempting to walk typical symptoms of paralysis agitans were noted

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Cardiospasm with Dilatation of Esophagus—Snodgrass' patient aged 66, had had trouble in swallowing since he was 14 Food would stay in his esophagus several hours and then he would have to spit it out This continued without treatment for forty years Seven years ago, he had influenza, and from that time he grew steadily worse in regard to his swallowing It required enormous pressure to force food into the stomach He found that he could eat practically a whole meal before swallowing it It would then be necessary for him to leave the table, throw his arms back grasp something firmly take a drink of water, throw his head back and thus with enormous pressure force the food into his stomach It would shoot in with a very audible whistling sound The esophagus, however was never entirely emptied and every morning he would throw out a large amount of food that had been taken the night before He had no particular distress after eating he never vomited His bowels were regular, he had a slight brassy cough no pain, was somewhat nervous and ill-nourished On giving him a bismuth meal it was found that no food passed into his stomach, the esophagus was enormously dilated, was narrowed down by a small stricture in the region of the cardia about 1½ inches long and ⅛ inch wide By means of bougies and a hydrostatic dilator the stricture was gradually stretched so that normal function of the gastro-intestinal tract was secured

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Case of Hydatiform Mole—The interesting features connected with this case are the fact that none of the hydatiform mass escaped from the uterus which would have made the diagnosis easy Two features, however seemed to be important signs of missed pregnancy or mole namely the discharge of a large amount of clear fluid and the soft semifluxuant feel of the uterus with only slight effort at contraction and the absence of fetal heart sounds Hysterotomy was done and the hydatiform mole the result of a missed pregnancy, was removed The mole was separated with difficulty from the mucosa The hydatiform mass about filled a quart cup

Case of Complete Traumatic Rupture of Kidney—Graves and Casper's patient sustained a rupture of the right kidney as the result of a fall down stairs After being picked up he complained of pain in his back and right side and soon fainted He was aroused in a few minutes and during the night complained of pain He could not urinate and a small amount of bloody urine was obtained by catheterization Patient was evidently in shock Physical examination showed dulness and marked tenderness over right loin at level of the third and fourth lumbar vertebrae There was general tenderness over his abdomen, no fluid in abdomen He had intense thirst since the accident and had been extremely restless He died about twenty-four hours after the accident The necropsy disclosed a complete transverse rupture of the right kidney

Paralysis Agitans, Sequel of Influenza—Moren's patient was 7 years of age Following an attack of influenza she developed paralysis agitans, the right side being involved to a greater extent than the left There was practically no tremor so long as she remained quiet, but on attempting to walk typical symptoms of paralysis agitans were noted

Maine Medical Association Journal, Portland

June 1921, **11**, No 11

Type of Operation in Appendicitis E H Pisley Waterville—p 327
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Laryngoscope, St Louis

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Some Indications for Operation on Nasal Sinuses in Children L W Dean and M Armstrong Iowa City—p 273
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Medical Record, New York

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Nebraska State Medical Journal, Norfolk

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Neurocirculatory Asthenia Review of Literature and Reports of Cases in Discharged Soldiers M J Breuer, Lincoln—p 163
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New Jersey Medical Society Journal, Orange

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New Orleans Medical and Surgical Journal

June 1921 **73**, No 12

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Corrective Rhinoplasty A I Weil New Orleans—p 507
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Hero Doctor H Dupuy New Orlean—p 529

FOREIGN

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British Medical Journal, London

June 11, 1921 **1**, No 315

*Limps in Children J Fraser Edinburgh —p 843
Residual Vaccines C E Jenkins —p 846
Lethargic Encephalitis G S Haynes, Cambridge —p 849
Ocular Symptoms in Slighter Cases of Lethargic Encephalitis R Pickard Exeter —p 851
*New Growth and Reducing Substance in Blood A S Leyton and H G Leyton Cambridge —p 852
Path of Toxins to Central Nervous System M Button, Rye Sussex —p 853

May 1921 **2**, No 5

Problems in Neurology Argyl Robertson Pupil S A K Wilson —p 1
Analytical Interpretations M Nicoll —p 26

Limps in Children—Fraser divided these limps into functional limps, painful limps, flaccid limps, spastic limps mechanical limps and stiff limps The diagnosis can be made by means of observation alone Each individual condition must be treated on independent and special lines If the limp is functional the less attention paid to it the better Sympathy and local treatment will probably intensify and prolong it Painful limps call for early and careful treatment by rest and immobilization of the painful part Flaccid limps usually owe their origin to poliomyelitis hence prevention is better than cure When the limp has become established mechanical treatment and operative treatment offer the most promising lines of treatment Mechanical treatment by splints in children is often disappointing Spastic limps call especially for educational efforts Occasionally surgery steps in beneficially with such simple procedures as tenotomy and tendon lengthening, but the intelligent use of corrective splints applied at night and careful education during the day produce good results The common essential feature of most mechanical limps is shortening and the aim should be to correct if possible the mechanical error, which is producing the shortening rather than to disguise it by such a procedure as heightening the boot sole This should only be done as a final stage in treatment and after all other errors, such as adduction, etc, have been corrected If raising the boot sole is the only remedy adopted, it may lead to a progressive increase in shortening Stiff limps generally call for little in the way of treatment It is essential, however, that the part affected should be in the best possible position for subsequent ambulation

Residual Vaccines—A new technic for the preparation of residual vaccines is described by Jenkins which embodies the principle of Thomson's and Dean's methods The term 'detoxicated' he thinks is unfortunately somewhat misleading and has even caused this type of vaccine to be looked on with a certain amount of suspicion It has been thought that a preparation which is itself nontoxic cannot be expected to stimulate a protective reaction on the part of the tissue If this were so, these vaccines might with reason be suspected But they possess a toxicity of a definite type, and this toxicity is contained in the bacterial residue which remains after the complete removal of the toxins and endotoxins Therefore Jenkins prefers to call them vaccines of the bacterial residue or more briefly residual vaccines The clinical results from the use of these vaccines are said to have been good especially in cases of uncomplicated chronic bronchitis

Reducing Substance in Blood and Tumors—While searching for further light on the problems of immunity, the Leytons tried the effect of transplanting in succession each of the endocrine glands to see if any one of them by their secretions caused or accelerated the growth of tumors The only one that appeared to affect the growth of inoculated sarcoma in rats was the parotid The blood sugar content of patients suffering from malignant disease was also investigated and the reducing substances invariably were increased Further, in most of the cases which have been under observation for any length of time a definite excretion of sugar in the urine has appeared from time to time So consistent have been the results that to rely on this test to differentiate between simple and malignant cases The experiment of feeding rats on sugar after they have been injected with a bacillus with filtrable spores isolated from a case of human sarcoma was successful Rats inoculated with the same culture, but not fed on sugar, showed no evidence of growth locally or in the lungs after three months Six other rats fed on sugar, but not inoculated with bacteria, likewise remained healthy

Indian Journal of Medical Research, Calcutta

July 1920, **8** No 1

Arthropods of Medical and Veterinary Importance in Mesopotamia and Their Relation to Disease III Bot Flies W S *Patton —p 1*
Indiana Calliphorinae I Chrysomyia Bezziana Villeneuve Common Indian Calliphorine Whose Larvae Cause Cutaneous Myiasis in Man and Animal W S Patton —p 17
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Bionomics of Houseflies IV Life History of Musca P R Awati —p 80
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Progress Report on Surgery of Freshwater Gastropod Mollusca of Indian Empire and of Their Trematode Parasites N Annandale and R B S Sewell —p 93
*Correlation Between Chemical Composition of Anthelmintics and Their Therapeutic Values in Connection with Hookworm Inquiry in Madras Presidency VI Oleum Terebinthinae, J F Gaius and K S Mhaskar —p 125
Dilution of Reagents W F Harvey —p 131
*Value of Wassermann Test in Malaria K R K Iyengar —p 136.
Kala Azar I Interim Report on Kala Azar Work from 1917 to 1919 K Knowles —p 140
Id II Peripheral Blood in Kala Azar R Knowles —p 162
Id III Spleen Puncture Findings R Knowles —p 177
Id IV Experimental Work and Possible Methods of Transmission of Kala Azar R Knowles —p 186

Therapeutic Values of Anthelmintics in Hookworm.—Healthy male prisoners were treated by Caius and Mhaskar with increasing doses of turpentine shaken with gum acacia emulsion and administered in two portions at half an hour interval This treatment was preceded by an overnight dose of magnesium sulphate and followed by another dose of salts administered two hours after the second portion of the oil No food was allowed until the bowls had moved Occasional giddiness was noted with a 75 minims dosage of the highly resinified oil, while no toxic symptoms of any kind developed with a 180 minims dosage of the unresinified oil In a series of seventy-nine cases treated with varying dosages of oil of turpentine, eleven hookworms were removed out of a total of 1 316 Moreover no ascarids were expelled, though roundworms were found present in twenty-five cases and whipworms in sixteen Therefore the authors conclude that oil of turpentine cannot be recommended as an anthelmintic

Value of Wassermann Test in Malaria—Iyengar examined the serum in eighty-four cases of undoubted malaria in adults and fourteen in children Seven gave a positive Wassermann reaction He concludes that malaria is not a cause of a positive reaction and quinin does not affect the Wassermann reaction

International Journal of Psycho-Analysis, London

1920 **1**, No 2

Psychogenesis of Case of Female Homosexuality S Freud —p 125
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Reaction to Personal Names C P Oberndorf —p 223
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Medical Journal of Australia, Sydney

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Modern Obstetrics Case for Nature F Meyer—p 419
Clinical Reports of Two Unusual Cases G Doyle—p 421

May 28 1921 1 No 22

Recent Advances in Diseases of Eye as Affecting General Practitioner W W Hoare—p 425
Recent Advances in Ear Nose and Throat Specialty from Point of View of General Practitioner R G Brown—p 437
Huon Pine Oil W A Harrison—p 440
*A Broth of a Boy C H E Lawes—p 441

Unusually Large Baby—Lawes' patient had the following dimensions at birth weight 15 pounds, height, 21 5 inches chest, 16 inches, head occipito-frontal circumference, 15 5 inches, occipito-mental diameter 6 09 inches

Annales de Medecine, Paris

April 1921 9 No 4

*Liver and Kidney with Gastric Ulcer P Le Noir et al—p 225
Pleural Effusions with Induced Pneumothorax F Dumarest and F Paradi—p 243
Action of Thyroid and Parathyroids on Respiratory Interchanges M Labbe and H Stevenin—p 264
*Bovert Test of Spinal Fluid G Guillain and E Libert—p 271
Physicochemical Factors in Regeneration of Peripheral Nerves J Lhermitte—p 275

Liver and Kidney Disease Secondary to Gastric Ulcer—Extremely pathologic conditions in liver or kidneys or both were found in 5 patients who had died from three to eleven days after a successful gastro enterostomy There had been no appreciable symptoms to attract attention to liver or kidneys during life These surprising experiences impelled Le Noir and his co-workers to apply functional tests to 43 other patients with gastric ulcer and they found evidence of insufficiency of the liver by one or more of the tests in all of the 23 tested for alimentary glycosuria coagulation time digestion hemoclasis after ingestion of 200 c c of milk and urobilinuria Other causes for the liver impairment could be excluded so that the defect in the stomach wall seemed to be the only explanation especially as the insufficiency of the liver was most pronounced in the cases of long standing ulcers, and especially with ulcers on the most highly vascularized part of the stomach the lesser curvature Bleeding from the ulcer seemed to be more frequent more intense and to last longer in the cases with impaired liver functioning In 5 cases described in detail there was uncontrollable vomiting, liable to mislead to an operation for stenosis of the pylorus unless the signs of liver or kidney insufficiency were heeded In 2 other cases what was supposed to be fatal operative shock was cleared up by discovery of unsuspected fatty degeneration of the liver Operative shock may be merely the manifestation of an acute liver or kidney injury the anesthetic the last straw breaking down the diseased organs Dyspeptic coma with acidosis and grave jaundice are the other forms in which this secondary liver or kidney disease may manifest itself in gastric ulcer cases Among the practical deductions from these findings is the advantage of limiting intervention to gastro enterostomy instead of resection in these cases with evidence that the liver or kidney or both are below par Also that anesthetics which injure the liver should be avoided Also the necessity for special care to ward off inanition acidosis when hematemesis compels restriction of mouth feeding The most important lesson, however, is the necessity for not delaying the operation on the gastric ulcer until the liver is damaged beyond repair The open ulcer in the stomach generates local septic complications, and allows the passage into the blood, and hence the arrival in the liver and kidneys, of foreign proteins on which the gastric juice has not had a chance to act The resulting damage of liver or kidneys modifies the symptoms, the course and the prognosis of the gastric ulcer

Bovert's Test of Spinal Fluid—Guillain and Libert found a positive response to the Bovert test in every one of their forty subjects with various diseases whenever the albumin content of the cerebrospinal fluid was above the normal It throws no light on the cause of the hyperalbuminosis The test is made by pouring 1 c c of a 0 1 per thousand solution of potassium permanganate on the walls of a tube containing 1 c c of the cerebrospinal fluid With normal fluid there is no change in tint, in pathologic conditions a yellow line appears at the junction of the two fluids, and on agitating the tube the fluid turns a clear yellow

Archives de Medecine des Enfants, Paris

April 1921 24, No 4

*Hutinel's Cardiocirrhosis J C Navarro (Buenos Aires)—p 201
*The Pretuberculous State in Children P Richard—p 215
Gallop Sound in Two Children with Intact Kidneys A d Espine—p 237
Median Upper Hare Lip V Veau and C Ruppe—p 241
Medical Treatment of Stenosis of Pylorus J Comby—p 244

May 1921 24, No 5

*Anemia in Infants E Weill and A Dufourt—p 265
*Osteitis Deformans L de Castro Freire (Lisbon)—p 289
Bilateral Hydronephrosis in Young Infant Variot and Walter—p 297
*Idiocy from Parathyroid Insufficiency J Comby—p 303

Hutinel's Cardiocirrhosis—Navarro recalls that various causes may be responsible for this association of heart and liver disease in children Syphilis was undoubtedly a factor in the first of two cases he reports The large liver and asystolia without valvular disease dominated the clinical picture in this child of 6 In the other case, the child of 10 was supposed to have tuberculous peritonitis The liver and abdomen were much enlarged but the heart seemed to be normal Necropsy after intercurrent pneumonia revealed the unsuspected degeneration of the heart Each of the thirty times the abdomen had been tapped, an average of 10 liters of fluid had escaped

The Pretuberculosis Stage in Children—Richard reviews various ways and means to detect the soil on which tuberculosis is most liable to take root Tuberculous parents transmit a demineralization diathesis to their children, and the latter are poorly nourished as a rule with low blood pressure the blood showing high viscosity Roentgenology supplements the clinical findings, and gives a basis for insisting on preventive measures A combination of pituitary and suprarenal treatment often renders good service

Anemia in Young Children—Weill and Dufourt discuss the features that distinguish anemia from lack of iron, from injury or inadequate production of blood corpuscles, and from anemia from changes in the plasma They discuss further the causes

Deforming Fibrous Osteitis—An illustrated description is given of a severe case of this kind in a man of 27 A previous report of the same case was published in the *Archives* ten years ago The limbs and trunk have continued to shrivel and atrophy but the head has grown very large the circumference now is 66 cm while the total height is 118 cm In this and in Riedinger's case, inherited syphilis may possibly be a factor

Curable Idiocy of Parathyroid Origin—Comby declares that evidence is accumulating to prove that an acquired idiocy of parathyroid origin is not uncommon Fortunately it seems to differ from thyroid idiocy myxedematous idiocy in that it is amenable to parathyroid treatment G H Clark has recently reported three cases of this kind The apathy tremor and convulsions recalled to his memory the effects of parathyroidectomy in animals, and suggested treating them with parathyroid extract This was followed by prompt improvement in the young children He published the cases recently under the heading 'An Undescribed Condition of Infancy"

Medecine, Paris

May 1921 2, No 8

*Early Diagnosis of Pulmonary Tuberculosis L Renon—p 581
*Vaccination of Cattle Against Tuberculosis A Calmette—p 590
*Overlapping Asthma F Bezançon and S I De Jong—p 592
*Prophylaxis of Tuberculosis L Granjux—p 597
Diagnosis of Pulmonary Abscesses J Chalier—p 601

Technic for Artificial Pneumothorax Treatment G Ku s —p 603
Indications for Sanatorium Treatment L Guinard —p 608
Bronchitic Sowers of Bacilli A Pissavy —p 613
*Preventive Heliotherapy P F Armand Delille —p 615
*Examination of Sputum A Philibert —p 620
Diagnosis of Tuberculosis in Infants R Debre —p 626
*Acid Resisting Bacteria A Vaudremer —p 631
Iodin Internally in Treatment of Tuberculosis H Dufour —p 634
*Diarrhea in the Tuberculous P Lassabliere—p 640

Early Diagnosis of Pulmonary Tuberculosis—Renon concludes his review of the early diagnosis at different ages by advocating that legislation in all countries should command the only truly effectual means for the early diagnosis, that is strict and compulsory bacteriologic examination of the sputum, in all cases

Vaccination of Cattle Against Tuberculosis—Calmette has been much encouraged with the results of inoculating calves with cultures of tubercle bacilli cultivated on a culture medium consisting of potato cooked in beef gall with 5 per cent glycerin Bacilli thus cultivated are only slightly virulent—small laboratory animals bearing them even by intravenous injection—but they confer a manifest resistance not only to natural infection but to experimental intravenous inoculation with violent bacilli It is still a question how long this immunity lasts

Asthma—There are usually three phases in the course of asthma, first the paroxysms with long intervals due to some local lesion which has influenced the localization of the disturbance and later subsided Then comes a period in which some respiratory infection invites the asthma again, it is less violent but more frequent, and there are attacks of dyspnea from the congestion in the air passages The third stage is when heart and kidney disease entail further dyspnea, but this is usually labelled asthma like the preceding phases

Prophylaxis of Tuberculosis—Granjux describes the workings of the Grancher system It was described in THE JOURNAL, July 6 1918, p 1

Preventive Heliotherapy—Of all plants the human plant needs sunlight most This is Armand-Delille's text and he has been much gratified with the success of his 'sun school The children with no clothing but trunks left home at 8 a m each carrying his folding desk on his back and under the leadership of the teacher sought in the fields and woods a place for the class selecting different locations according to the wind the heat and the sunshine The mothers of the children in this school were all under treatment for tuberculosis in the sanatorium In order to obtain such fine results as he records, the children have to be trained to live in the sunlight exposing the body progressively The main point is to accustom the skin gradually to the action of the sun Such children acquire remarkable resistance to all physical agents sleeping in winter with open windows and light bed clothing and none of the children had colds during the winter He adds that the effect already realized with these hundreds of children should encourage the application of this preventive heliotherapy as a stimulant for nutrition of all children, and especially for those in cities where conditions are so unfavorable to the physiologic development of the child

Examination of Sputum—Philibert urges the importance of homogenization of sputum as the number of bacilli may be so small that they escape direct examination He has found sodium hydroxid the most effectual solvent for the mucin Centrifugation is greatly facilitated by reducing the density of the fluid by adding alcohol this renders the fluid lighter than the bacilli, which aids in collecting the bacilli in the sediment If no sputum is available, he gives an expectorant

Acid-Resisting Bacteria—Vaudremer relates that by cultivating tubercle bacilli in mediums free from glycerin they lose their acid-resisting properties but acquire them again if glycerin is added anew The resistance to acids thus seems to be traceable to the fats and carbohydrates which the tubercle bacillus has at its disposal

Treatment of Diarrhea in the Tuberculous—Lassabliere calls attention to the efficacy of the treatment which he has applied to 142 patients It consists solely in restricting the patients exclusively to sweetened condensed milk, diluted with four parts of rice water, 1 or 2 liters are taken during the twenty-four hours, a teacupful every two or three hours, with nothing else, fluid or solid

Paris Medical

May 28 1921 **11** No 22

*Acidosis in the Pregnant M Labbe J Hutinel and F Nepveux —p 421
Ionometric Dosage in Radiotherapy P Schrumpf Pierron —p 424
*Spondylosis Versus Spondylitis P Modinos —p 429

Acidosis in the Pregnant—The woman developed unexplainable dyspnea, tachycardia, uncontrollable vomiting and other symptoms of acidosis at the seventh month of pregnancy Sodium bicarbonate improved conditions temporarily but emptying the uterus aggravated conditions The woman died and the microscope showed profound degeneration of the liver in both mother and fetus, while the other viscera were sound In a second similar case the woman recovered Such cases teach the importance of examining the urine for insufficiency of the liver in pregnancy disturbances

Spondylosis and Spondylitis—Modinos ranks rhizomelic spondylosis with osteomalacia and acromegaly, as a kind of trophoneurosis, an endocrine disturbance It is in this direction that therapeutic efforts should be directed He describes two cases in which everything else was tried but without avail Spondylitis subsides under merely symptomatic measures

Presse Medicale, Paris

May 28 1921 **29** No 43

*Fracture of Neck of Femur C Dujarier —p 421
Insufficiency of the Liver in Pregnancy A Cramicianu and M Lupper —p 424
*Gonococcus Ophthalmia Neonatorum A Cantonnet —p 426
*Quinidin in Treatment of Arrhythmia L Cheinisse —p 426

Fracture of Neck of Femur—Dujarier has modified somewhat Delbet's method of driving a screw axially into the neck of the femur, and describes with ten illustrations, the exact technic as he applied it in eighteen cases under roentgen control The results on the whole were incomparably superior to those obtained with the classic methods of treatment Radiograms taken at regular intervals show that the bone pushes inward in time, the head of the screw finally protruding from the bone Some of the patients walk without limping, but there is always some atrophy of muscles It is less pronounced in those who exercised their muscles as ordered All but one of the eighteen cases were fracture of the neck of the femur alone

Pregnancy Insufficiency of the Liver—The urine was examined daily and the test for digestion hemoclasis applied to ascertain the functional condition of the liver in forty-seven women with supposedly sound livers, a month or two before term Retention of bile salts was found in 20 per cent and of urobilin in 12 per cent The digestion hemoclasis tests gave positive findings testifying to insufficiency of the liver in 33 per cent Among the practical conclusions from the research are that choloroform should not be used for the pregnant as it superposes further toxic action on the liver and ether also had better be avoided

Purulent Conjunctivitis in the New-Born—Cantonnet found gonococci in only 18 5 per cent of forty-two cases of purulent conjunctivitis in new-born infants since last October In 12 5 per cent ordinary micro-organisms were discovered but in 69 per cent the conjunctivitis seemed free from micro-organisms although inclusions were found in the epithelial cells These inclusions were encapsulated and similar ones were found in the mother's vagina and in the male urethra The conjunctivitis does not differ materially from that caused by gonococcus except that it develops later not until the third to the twelfth day, and it lasts from fifteen to twenty days and exceptionally up to six or eight weeks Silver nitrate has no effect in warding it off but can be used in treatment if the secretion is profuse As it subsides a 1 per cent solution of zinc sulphate may be preferable

Quinidin in Treatment of Arrhythmia—Cheinisse reviews twelve recent French and German works on this subject It is evident he says, that quinidin can be counted on in certain cases to arrest the arrhythmia and force it back into an earlier stage But the day always comes sooner or later, when the drug ceases to act, and the fibrillation will persist thereafter

June 1 1921, 29 No 44

Tuberculosis of Glands in Cheek C Lenormant —p 433
*The Blood During Spa Treatment V Crigaut et al —p 434
Serologic Tests in Surgical Tuberculosis B Fried and M Mozer —p 436

Tuberculosis of Glands in Cheek—The gen al glands may be scattered along the facial artery and vein and the different groups may be the seat of acute inflammation or of a tuberculous process as in a case described by Lenormant with illustrations The treatment is that of tuberculous glands in the neck in general only that a disfiguring scar would be of more moment in the cheek All the cases he has encountered were in women He has never seen a case of cancer originating in these glands

Influence of Mineral Waters on Composition of the Blood—The research here related was done during courses of treatment with the mineral waters of Contrexeville The metabolic and other findings are tabulated from twelve of the eighty nine cases studied These waters are recommended for chronic nephritis and rheumatism lithiasis gout and obesity, and the benefit derived is explained in part by the drop in the cholesterin and the urea content of the blood and the progressive change toward normal of the Ambard index of urea excretion The latter is a reliable guide for conducting the treatment Uric acid deposits are swept out into the circulation by the modifications induced by the mineral waters This phase is followed by tardy elimination through the urine, and this can be accelerated by massage of muscles and other forms of physiotherapy under strict medical supervision

Serologic Tests for Tuberculosis—Fried and Mozer insist that tests for both syphilis and tuberculosis should be applied as the routine procedure to all serums sent in for examination By this means incipient tuberculous processes in bone joints glands or lungs can be detected long before they are clinically manifest In sixty-eight tuberculous children the reaction was positive in from 70 to 77 per cent of those with a known tuberculous process in vertebrae knee hip joint etc of less than two or three years standing but only in from 26 to 34 per cent longer than this In grave cases with fistulas the reaction occurred less frequently In 105 children with rachitis the percentage was only 7 5

June 4 1921 29 No 4

*Diazo Test for Bilirubin in Blood V A Hijmans van den Bergh —p 441
Vaccine Therapy of Colibacillurla V Maute —p 443
Traumatic Separation of Skull Suture J Murard —p 445

June 8 1921 29 No 46

Nature of White Bile A Gottlieb G Loewy and Mestrezat —p 453
*The Sympathetic Nervous System P Desfosses —p 455

Bilirubin in the Blood Serum—Van den Bergh states that continued experience with the test he published in 1913 has proved its reliability even in a concentration as low as 1 1,500 000 while no other substances give the same reaction with this diazo method The rapid or delayed response shows further whether bilirubin in the blood serum is the result of obstruction or of impaired liver functioning The reagent is made fresh with 25 c c of a 1 per thousand solution of sulphanilic acid, 15 c c of concentrated hydrochloric acid and 0 75 c.c of a 0 5 per cent solution of sodium nitrite The serum is treated with twice its volume of alcohol and the albumin centrifuged out The supernatant fluid is taken up with a pipet and the reagent is added in the proportion of 25 per cent by volume The fluid turns red with a violet tinge in the presence of bilirubin The test can be applied with as little as 0 5 c c of clear serum or even 0 25 c c

Traumatic Separation of Skull Sutures—Murard relates that callus is forming in the gap of 0 5 cm where the coronal suture of the boy of 13 separated after a fall from a second story Recovery was smooth, and the facial paralysis subsided by the third month His review of the literature confirms the wisdom of trying to force the bones to close the gap but this is a difficult matter Possibly agrafes might aid

White Bile—In the three cases described, the cystic duct was completely obstructed, and the fluid found in the gall-bladder was evidently the result of dialysis of the plasma, with no trace of bile salts or pigments In each case the gall-bladder showed fibrous degeneration

The Sympathetic Nervous System.—This is the first of a series of special articles on this great *système de correlation* as Desfosses calls it saying "In man the heart beats, the lungs ventilate, the intestines digest, and the liver works—all solely for the purpose of providing for the brain a constant internal environment to supply it with energy The only beneficiary of all this work that is done without its assistance *c'est notre intelligence*"

Revue de Chirurgie, Paris

1920 39 No 11

*Enterostomy in Peritonitis V Delore and Conrozier —p 605
*Chronic Occlusion of Duodenum by Mesentery J Leveuf —p 616
Strangulated Prehernia Lipomas J P Tourneux —p 653

1920 39 No 12

Pressure in Cerebrospinal Fluid in Jacksonian Epilepsy R Leriche —p 679
Circulation in Carotids After Ligation Marquis and Lefeuvre —p 689
Pathologic Physiology of Jacksonian Epilepsy Wertheimer —p 695

Enterostomy in Peritonitis—Postoperative or other paralysis of the bowel entails peritonitis but the danger is less from the peritonitis than from the bowel itself In 22 such cases reported here, 12 of the patients were saved by the enterostomy All died of the 7 with diffuse septic peritonitis and one of the 3 with acute and rapidly spreading peritonitis All recovered of the 4 with localized or circumscribed peritonitis and all but 2 of 8 with peritonitis secondary to ileus Another more extensive intervention would certainly have proved fatal but it is stated In 2 of the cases, the enterostomy had to be repeated at another point before relief was obtained in 1 case on the transverse colon, in another on the descending colon A suture thread is run around the peak of the intestine drawn out, and this thread is drawn tight as the catheter is worked into the tip of the peak As the catheter is pushed in the wall is thus invaginated with it protecting the mucosa against contact with the catheter The ends of the thread are tied around the catheter and fastened to the abdominal wall

Chronic Occlusion of the Duodenum from Compression by the Mesentery—Leveuf concludes his study of this subject with the details of two cases summarizing twenty-eight from the records If change of position and other medical measures fail colopexy with or without duodenojejunostomy, is indicated In his first case the occlusion of varying degrees was of four years' standing and required entero-anastomosis In the other case of four days standing and it yielded to postural treatment

Revue Franç de Gynecologie et d'Obstet, Paris

January 1921 15, No 11

*Pregnancies After Cesarean Section P Balard and J Planes —p 437
*Partial Symphysiectomy R Costa —p 445
Complicated Old Salpingitis G Deverre —p 449

Pregnancies After Cesarean Section—Balard and Planes have compiled 419 cases of pregnancy after cesarean section, in 47 delivery proceeded spontaneously by the natural routes The pregnancy continued to term in all but 2 or 3 per cent of 319 cases in which abortion occurred, and 7 per cent of the women were delivered at the eighth month Rupture of the uterus occurred in 2 5 per cent of the cases but 86 per cent of the women in this group recovered and 50 per cent of the children were saved There is absolutely no way of telling whether the uterus is anatomically and functionally capable of standing the strain, and they insist that during the last month at least the woman should enter an institution under close medical supervision Spontaneous delivery should be waited for but it should usually be aided with forceps to prevent violent efforts If anything suggests apprehension the patient had better stay in bed after the uterus has reached a certain size

Partial Symphysiectomy—Costa cuts out the upper part of the symphysis when the stenosis is limited to the superior inlet only with abnormally short true conjugate diameter This partial symphysiectomy is free from danger of hemorrhage and is so simple and easy he says, that it can be done at any time during the pregnancy or in labor It leaves a permanent depression which definitely enlarges the pelvis In the two cases in which he has applied this method the

operation was done at the fourth month in one case, and the pregnancy proceeded unmolested In the other case the stage of expulsion at term had lasted for four hours with no signs of progress The true conjugate measured 8 cm The contractions began again after the partial symphysiectomy, and in an hour and a half the child reached the perineum and was delivered in good condition His experience indicates that this operation increases the true diameter from 2 5 to 3 cm Another advantage, he says, is that the slant thus provided facilitates the mechanism of delivery while there is nothing to interfere with the gait later or invite complications "The rectus muscles are divided 1 cm to right and left of the median line just above the symphysis Then the periosteum of the pubic symphysis is worked loose from the front and rear aspects of the symphysis down to half its height Then with a long slender knife the bone and cartilage are cut away from above downward slanting back from the front down to half the height of the symphysis With a curet the surface can be scraped smooth The posterior periosteum is not sutured with the rest A slanting depression is thus left where the bone and cartilage have been cut out, thus enlarging the pelvis permanently to this extent No illustrations accompany the description

Schweizerische medizinische Wochenschrift, Basel

May 19 1921 **51**, No 20

Antagonistic Action of Calcium and Potassium K Spiro —p 457
*Radium Treatment of Cancer of the Esophagus G Hotz —p 460
Tuberculosis in Mountain Districts A Wolff Eisner —p 461
Nature and Origin of Scotoma Scintillans J Strebel —p 464
Virus of Febrile Herpes R Doerr and A Schnabel —p 469

Radium Treatment of Cancer of the Esophagus—Hotz extols the fine results he has obtained with radium treatment The long and narrow applicator is swallowed to the correct depth marked on the silk thread, and after the first eight-hour sitting the esophagus often becomes permeable for fluid foods Applicators of progressive sizes are used, and roentgen exposures supplement the radium treatment Exploratory excision has shown in a number of cases the complete cure of the cancer, as also necropsy of one patient Roentgenoscopy also confirms the disappearance of the tumor As soon as the course is completed, efforts must follow to prevent cicatricial stenosis This is accomplished by the patient's swallowing a similarly shaped lead weight nickel plated The weights are from 4 to 10 mm in diameter, and their weight and the active swallowing drives them slowly and harmlessly through the stenosis The lumen was enlarged to 10 mm in several of the cases, and the patients then refused further treatment, but these had to return later for correction of the stenosis Each patient is given a set of these lead weights, and swallows them one after the other until one sticks In case of hemorrhage swallowing one of these weights arrests the bleeding by direct compression He has been equally successful with radium in cancer of the pharynx and tonsils and pyriform sinus but the interval since has not been over eighteen months in any instance The danger of after-hemorrhage with cancer in the pharynx forbids the application of this method to outpatients

Pediatria, Naples

May 1 1921 **29** No 9

*Pneumococcus Peritonitis U Provinciali —p 385
*Jacksonian Epilepsy from Ascaridiasis L Sironi —p 397
*Infant Mortality at Messina G Bonfiglio —p 401
Epidemic Encephalitis in Girl of Six R Spano —p 413

Pneumococcus Peritonitis in Children—Provinciali suspected the pneumococcus infection from the herpes on the lips The clinical picture otherwise was that of acute and grave peritonitis without known cause in a boy of 8 and girl of 9 The boy recovered after exploratory puncture had shown the pneumococcus and a laparotomy had evacuated 2 liters of pus The girl succumbed not long after the laparotomy revealing the purulent pneumococcus peritonitis limited to the lower abdomen Nothing was found in either case demonstrating involvement of the lungs or tuberculosis, but the boy had a transient complicating pericarditis This subsided with the peritonitis, the cure being complete in two months from the first symptoms The sudden stormy onset of the peritonitis, herpes labialis, high leukocyte count, with polynuclears predominating and negative serologic tests for typhoid and paratyphoid call for bacteriologic examination of the pus for pneumococci

Jacksonian Epilepsy from Ascarids—The girl of nearly 4 had been having the attacks in the left arm for ten days, recurring from one to four times a day The child seemed otherwise normal, and the discovery of ascarids in the stools and a course of worm medicine were followed by a complete cure Sironi theorizes that some relic of some infectious or toxic process in the brain had left a point of lesser resistance, the toxins from the helminths acting on this spot were responsible for the spasms in the region innervated from this point

Infantile Mortality at Messina—Bonfiglio states that while Naples has a death rate from infectious diseases of 4 92 per thousand, Messina's rate is 1 97 In every thousand deaths in Messina, 402 58 are of children under 5

Cronica Médica, Lima

March 1921 **38** No 693

Icterohemorrhagic Spirochetosis J Arce —p 65
Hoover's Definitive Percussion of the Heart J B Menendez —p 75

Semana Medica, Buenos Aires

April 21 1921 **28**, No 16

*Hypertrophy of the Prostate F Mastrosimone —p 445
*The Diagnostic Therapeutic Tuberculin Test J J Viton —p 473
*Irradiosis for Research on Endocrine Glands D Rubinstein —p 477

Hypertrophy of the Prostate—Mastrosimone discusses from various standpoints the cases of hypertrophy of the prostate in which no operation should be attempted, those in which operative measures are imperative, and those in which they are optional All the evidence, he says is in favor of the transvesical technic, at one or two sittings, as the routine procedure, although occasionally subtotal perineal prostatectomy may be preferable, or even Bottini's intra-urethral electric cauterization Under exceptional circumstances Isnardi's resection of the vasa deferentia may prove useful In conclusion he warns that the care before and after the operation often requires more attention and solicitude than with any other class of patients

The Diagnostic-Therapeutic Tuberculin Test—Viton's success in treating latent and active tuberculosis with extremely minute doses of tuberculin has been repeatedly mentioned in these columns He argues that occult, dormant and masked infection with the tubercle bacillus is extremely frequent and that most of the infections in adults are merely the transient flaring up after of this infection acquired in early childhood This unsuspected latent bacillary infection has extraordinary consequences [illegible] herto not been traced to their primary cause, owing to insufficiency of the extremely minute dose [illegible] infection is benefited and as the [illegible] in the clinical picture disappears, the rest of the symptoms generally become attenuated or vanish likewise

Parabiosis for Study of Factors Affecting Growth—With parabiosis induced, for example by suturing side to side two puppies from the same litter if the hypophysis of one is removed the hypophysis of the other will hypertrophy This puppy by the end of the year will show the effects of excessive hypophysis secretion, while the other puppy will show the effects of inadequate secretion

Siglo Medico, Madrid

May 14 1921 **68** No 3518

*Manifestations of Arteriosclerosis in the Eye E Fuchs —p 453
*Suture for Herniotomy J Blanc Fortacin —p 457
Decortication of the Lung Idem —p 458
Share of Syphilis in Epilepsy C A Bambaren —p 460 Conc n No 3519

Manifestations of Arteriosclerosis in the Eye—Fuchs expatiates on the numerous lesions in the eye and the optic nerve for which arteriosclerosis may be responsible and the importance of detecting them as an aid to the early diagnosis of arteriosclerosis especially of the brain, and of nephritis diabetes and syphilis There is usually a history of slight hemorrhage in the retina at some time in cases of fatal apoplexy He has never found the internal carotid or the

ophthalmic artery normal at necropsy after 70 Syphilitic arteritis is always accompanied with a lymphocyte infiltration of the wall of the vessel at various points, while senile arteriosclerosis is merely a degenerative process He has found isolated foci of atrophy in the optic nerve after 70 These foci are strung along the nerve from the chiasm to its entrance into the eye, and he gives four photomicrograms of these findings, saying that they have never been described before

Suture After Herniotomy—Blanc has had so many unfavorable experiences with catgut at herniotomies that he has abandoned it almost completely with these operations His technic for coaptating extensive surfaces is shown in two sketches The first layer is sutured with silkworm gut, two needles working separately from the ends of the incision, for a femoral hernia for example The outer end of each thread is tied over a small segment of rubber tubing, the other ends are brought out through the skin near the middle and tied together After replacing the spermatic cord, the aponeurosis is sutured above it in a zigzag suture from each end of the incision Eight or ten days later he removes the silkworm gut by cutting it each side of the central knot and pulling on the outer ends The coaptation realized by pulling thus on each end of each suture on each plane is exceptionally firm

Tohoku Journal of Experimental Medicine, Tokyo

May 3 1921 **2**, No 1

*Effect of Ergot on Hemoptysis M Maeda—p 1
Hyperglycemia and Glycosuria in Frightened Rabbits I Fujii—p 9
Agglutination of Typhoid Strains K Aoki and T Konno—p 63
*Intravenous Alcohol Anesthesia K Nakagawa—p 81

Effect of Ergot on Hemoptysis—Maeda explains the contradictory effect of ergot on pulmonary hemorrhage by the contraction of the bronchial muscle which it induces, with a secondary increase in the blood pressure in the lung (In English)

Hyperglycemia and Glycosuria in Frightened Rabbits—Fujii gives details of the results of research on the sugar content of the blood in the urine of eighty-three rabbits fastened to the experiment table, with and without division of the splanchnic nerve. There is always a rise in the sugar content of the blood as the rabbit is fastened to the operating table It reaches its height in three to six hours, and this *fesselungshyperglykamie* is accompanied by glycosuria, as a rule and the amount of chromaffin substance in the suprarenals becomes reduced These effects are less pronounced when the animal is protected against chilling

Intravenous Alcohol Anesthesia—Nakagawa gives the details of experiments with forty-eight rabbits and five dogs in which general anesthesia was produced by injection of a 5 to 20 per cent solution of alcohol into the vein About 4 gm. per kg. of body weight the breathing continued tranquil and no pathologic changes were found in the animals dying soon after The anesthesia allowed surgical intervention with convenience, but complete anesthesia was late in developing and persisted longer than with ether Satisfactory results were obtained with a mixture of alcohol and ether in saline infusing 2.2 c.c. of alcohol and 1.4 c.c. of ether per kg. at the rate of 4 c.c. of the 10 per cent solution per minute, the anesthesia could be maintained with only 0.8 c.c. of the solution It began the eighteenth minute and could be kept up for forty minutes

Archiv fur Kinderheilkunde, Stuttgart

April 16 1921 **69** No 3-4

*Increase of Helminthiasis in Children J von Gottberg—p 161
*Etiology of Infectious Diseases A Tobeitz—p 185
Hematology of Varicella in Infants G Baer—p 198
*Influence of Reaction of the Food Gertrud Baumgardt—p 209
Gastric Digestion in Infants H Davidsohn—p 239
*Serotherapy of Scarlet Fever P Bode—p 256
Bacillary Dysentery in Children P Schultz Bascho—p 269
Suppurative Parotitis in the New Born W Plewka—p 279
Pseudotetanus and Identity of Forms of Tetanus G Kaulen—p 284

Helminths in Children at Bonn—Gottberg found ascarids in 40 per cent of 200 schoolchildren examined during 1919, the trichocephalus in 4 per cent and oxyurids in 32 per cent Thus a total of 62.5 per cent were infested None of the children seemed to have any disturbance from their helminthiasis He compares his figures with those in other cities and countries

Etiology of Infectious Diseases—Tobeitz is convinced that, besides the direct transmission of bacteria from person to person, there must be other factors, individual or external, which explain the onset of an infectious disease That it is not the bacteria alone is amply demonstrated, he asserts, by the comparative infrequency of hospital contagion although the close crowding and other factors would seem to invite it He is chief of the infectious department of the Graz public hospital and gives the figures in regard to hospital contagion of the principal infectious diseases there Another argument is the development of scarlet fever after a burn, which he has repeatedly had occasion to observe, in the absence apparently of all sources of contagion He assumes a facultative autogenesis and deplores that conditions in man and animals are so widely diverse that this is one of the problems that cannot be settled by experimental research

Relation Between Bases and Acids in the Food—Baumgardt discusses the effect which changes in the reaction of the food can exert on the transformations of matter and energy in children The metabolic findings compared with the acid or alkaline reaction of the food are tabulated as determined in four healthy boys between 11 and 13 kept apart from other inmates of the orphan asylum The alkalinity of the blood and the mineral content of the body showed no changes under extreme artificial alkalinization or acidification of the ordinary food of the institution

Serotherapy of Scarlet Fever—Bode injected intramuscularly 30 scarlet fever patients with about 60 c.c. of convalescents serum and reports defervescence with a crisis in 9 in less than twenty four hours remissions in 4 rapid lysis in 6 and remissions plus lysis in 11 The effect on the temperature of the injection was pronounced in every case and no less surprising, he says was the effect on the general condition the children dropping to sleep after a few hours sometimes in the midst of wild delirium and waking with their minds clear One boy of 12 with convulsions had no return of them after the injection The circulation improved likewise but the eruption was not modified nor complications warded off The serotherapy has a purely antitoxic action

Archiv fur klinische Chirurgie, Berlin

March 21 1921 **115** No 3

*Neuropathic Joint Affections O Hildebrand—p 443
*Operative Treatment of Hypernephroma E Michaelsson—p 494
*Cholelithiasis and Achylia F Rydygiard—p 511
Displaced Horse Shoe Kidney Raeschke—p 531
*Hernia on Linea Alba F Mandl—p 537
Complications of Perforated Gastric Ulcer H Steindl—p 562
Excision of Edges of Wounds L Schonbauer and H Brunner—p 581
Hypertonic Saline in Treatment of Wounds H Landau—p 621
Traumatic Pseudohydronephrosis E Picard—p 636
Intestinal Functioning Under Experimental Intravenous Vaccine Therapy O Orth—p 644
Anatomy of Stomach Arteries L Hofmann and K Nather—p 650
Postoperative Thrombosis and Pulmonary Embolism A Rupp—p 672
*Localization of Pulmonary Embolism A Rupp—p 689
*Resection of Parasitic Monster F Franke—p 691
Correction of Displaced Canthus J F S Esser—p 704
Anatomy of Vessels of Dura Mater R Demel—p 714
*Stomach Behavior in Cholelithiasis C Rohde—p 727
Fistula Between Esophagus and Trachea E Picard—p 744

Neuropathic Joint Disease—In all Hildebrand's research he has never found any evidence that cerebral paralysis is able to induce changes in joints such as we find in tabes and syringomyelia But injury of peripheral nerves entailed identical changes of an extreme type in two cases described and he theorizes to explain the mechanism of this as the consequence of vasomotor derangement One of the cases was an actual neuromatous elephantiasis of one leg for which spina bifida was responsible The patient was a man of 33, talipes developed at the age of 3, and paralysis of that leg at 25 Healing after an operation on a neuropathic joint affection is liable to be defective, in tabes the bones show but scant tendency to repair

Hypernephroma—Michaëlsson analyzes thirty operative cases of hypernephroma with seven surviving from four to

fifteen years to date The youngest of the patients was 34 at the time of the operation, and the group of survivors includes one man now 74 Even microscopic evidence of nonmalignancy does not guarantee against malignant recurrence, although this is not inevitable

Achylia in Cholelithiasis—Rydgaard found achylia in 47 4 per cent of 158 operative gallstone cases in Rovsings' service since 1907 He tabulates similar data from other clinics, the whole showing achylia in 34 4 per cent of 471 operative cases and hypochylia in 17 6 per cent Gastric secretion was normal in only 27 per cent of the 26 male gallstone patients and in 57 6 per cent of the 132 women patients Rydgaard's data confirm anew the wisdom of early operative treatment in cholelithiasis to arrest progressing secretory disturbance and ward off achylia Achylia is almost certain to occur when there is incontinence of the sphincter papillae from gallstone obstruction of the cystic duct If this sphincter keeps continent gastric secretion is not modified The experiences related testify further that it is better to save the gallbladder as conditions after cholecystotomy may favor the restoration of normal gastric secretion Fully 74 per cent of the cases of obstruction of the cystic duct were accompanied by achylia Reflex action explains the achylia from the irritating effect of the gastric juice passing into the duodenum without the normal neutralization by bile

Hernia on Linea Alba—Mandl discusses hernias along the median line as connected with ulcerative processes in stomach and duodenum

Postoperative Thrombosis and Pulmonary Embolism.—Rupp found embolism or infarcts in the lungs in 5 per cent of the 12 971 cadavers examined in eighteen years The 22 689 operative cases during eighteen years were followed by fatal thrombo embolism in 0 26 per cent while 1 1 per cent succumbed to this cause of the patients with internal diseases Changes in the force and speed of the blood stream and injury of vessel walls are factors common to all the cases The data impose the necessity for thorough preparation of the patient in respect to heart lungs and kidneys before an operation and scrupulous care to avoid any injury of vessels or chilling etc, with measures to keep the blood circulating properly including gymnastic exercising of the lungs by movements of arms and legs heart tonics, massage etc

Localization of Pulmonary Embolism—In 659 cases of pulmonary embolism the lower lobes were affected four times oftener than the upper

Parasitic Monster—The xiphopagus was of the epigastrius parasiticus type the limbs and trunk well developed, but without a head or spine The junction was from the navel to the sternum, and the connection was of soft parts and peritoneum which Franke severed leaving ample skin flaps to cover the large defect The child was only 2 days old at the time and has developed apparently normally since with scarcely a trace of the operation This is the fourth successful case of an operation on a xiphopagus to be recorded, he says

Behavior of Stomach in Cholelithiasis—Rohde found normal gastric secretion in 25 81 per cent of sixty-two operative gallstone cases and achylia in 46 77 per cent In fully 74 per cent of the cases there was deficient gastric secretion and this was pronounced in 88 per cent of the cases in which the bile passages had been obstructed After removal of the gallstones or other operation, the achylia or hypochylia has persisted unmodified through the years in the twenty cases reexamined, only two show normal gastric secretion He ascribes this gastric deficiency to the loss of gallbladder functioning and expatiates on the manifold secondary disturbances from a diseased gallbladder The common innervation of both bile apparatus and stomach explains the pains in the stomach with gallstones, and the frequent mistaken diagnosis of stomach disease in cholelithiasis Adhesions and traction from the gallstone process modify both motor and secretory function He urges as the routine procedure cholecystectomy plus T drainage Discovery of deficient gastric secretion may turn the scale for differential diagnosis of cholelithiasis

Deutsche medizinische Wochenschrift, Berlin

May 19 1921 **47**, No 20

Puerperal Eclampsia W Zangemeister—p 549
Lipoid Antibodies and Wassermann Test Much and Schmidt—p 552
Persistent Severe Spinal Cord Injuries After Lumbar Anesthesia A Muller—p 553
Artificial Pneumothorax in Treatment of Pleuropericarditis and Pleuritis Sicca F O Hess—p 555
Tetanus Following Ear Trauma A Seligmann—p 555
Precipitin Reaction in Darkfield and Hanging Drop and Its Forensic Import G Strassmann—p 556
*Pertussis Serum G Stern—p 557
Paratyphoid and Symptoms of Tetanus O Bossert—p 558
Combined Sachs-Georgi and Wassermann Reaction Stuhmer and Merzweiler—p 559
Open Botalli's Duct with Hypertrophy of Left Ventricle R Gassul—p 559
Radical Operation for Perforated Gastric Ulcer Dewes—p 560
Nature and Treatment of So Called Epicondylitis Dubs—p 561
Renal Hemorrhage P Schafer—p 562
The Chin Shoulder Maneuver as a Prophylactic Measure to Prevent Asphyxia in Anesthesia W Kuhl—p 563
Abdominal Massage A Muller—p 563
Effectiveness of the Most Common Stimulants Applied to the Hematopoietic Organs G J Luhrs—p 563
Extension Apparatus for Crooked Fingers L Schmidt—p 564
Interrelationship of Eye and Dental Disease A Gutmann—p 565
Anorexia in Children L Langstein—p 566

Pertussis Serum—Stern reports the results of investigations undertaken to show the value of bovine serum injections in pertussis He first demonstrated that injections of normal bovine serum had no effect on the course of pertussis The serum of young bovines previously inoculated with vaccine was also frequently ineffective Especially adapted smallpox strains must be employed, and the serum must be procured at just a certain time to prove effective Beginning with smaller quantities, he found that 20 c c of the serum were required to bring about a distinct therapeutic effect He injected usually 10 c c subcutaneously in each thigh of the children (also infants) and then prescribed rest in bed After the injections fever ranging between 28 and 39 5 C commonly rose but always receded within a few hours No bad effects were observed The benefit from the serum injections in some twenty cases was very marked Either the coughing paroxysms were checked absolutely or the vomiting ceased and the coughing became less frequent and less intense The duration of the disease was much shortened In a few instances a second dose of 20 c c was given a week after the first, with prompt effect

The Nature and Treatment of So-Called Epicondylitis—Dubs says that there is no such thing as epicondylitis in the real sense of the word The condition that goes by this name has nothing to do with the epicondyle It is not associated with inflammation or any local change in the epicondyle The real basis of the clinical symptoms of so-called epicondylitis is doubtless an isolated capsule injury of the humeroradial or the tibiofibular joint, the result of repeated occupational injuries which arise from the fact that certain maneuvers have to be carried out with the forearm flexed and supinated at the same time From the standpoint of health insurance such injuries cannot therefore be regarded as traumatic A small proportion of the capsule injuries may, however be the result of trauma and may arise from an isolated sprain of the humeroradial joint By way of treatment, hot air and rest are most effective The joint should not be immobilized, but the joint should be favored, and supinating and flexing movements involving the joint should be avoided No heavy weights should be lifted Healing is slow but after four or five weeks patients may cautiously resume work

Deutsche Zeitschrift fur Chirurgie, Leipzig

May, 1921 **162**, No 5 6

Treatment of Pericecal Abscesses K Griep—p 289
*Resection of Stomach by Billroth II W F Suermondt—p 299
*Treatment of Infected Wounds H Hellendall—p 322
*Fate of Fascia Fat Flaps in Brain Dura Defects W Koennecke—p 342
*Tardy Rachitis H Sauer—p 356
*Irradiation of Spleen in Prophylaxis of Hemorrhage Kurtzahn—p 373
*Local Temperature in Differential Diagnosis E Seitz—p 383
Fracture of Both Sesamoid Bones of Big Toe E Muller—p 392
*Projectiles Left in Thorax W Jehn and K Mayer—p 398
*Gastro Enterostomy with Loop of Ileum J Dubs—p 424

Billroth II and Its Results—Suermondt has been able to trace to date eighty-two of 100 patients treated by resection

of the stomach for ulcer at the Leiden surgical clinic The list includes twelve transverse resections, twenty by Billroth I and fifty by Billroth II The present condition was ascertained by a test breakfast and the roentgen findings The outcome is incomparably better in the Billroth II cases, the stomach empties itself more rapidly and more completely than with the other methods, and the patients have all gained materially in weight The test meal showed normal findings in all but one case in which occult blood was found in the stools for which no explanation could be found As the food passes more rapidly out of the stomach there is less stimulus to production of gastric juice which may partially explain the less tendency to hyperchlorhydria

Treatment of Infected Wounds—Hellendall describes his favorable experiences with a slight modification of the Carrel Dakin solution technic

Fascia-Fat Flaps for Brain-Dura Defects—Koennecke comments on the conflicting views that prevail as to the best method for closing defects in the brain reporting here the ultimate outcome in seven cases in which three or four months after healing of the wound of the brain he implanted a flap of fascia and fat taken from the rectus or thigh The defect in the skull was closed from three to six months later He has now a total record of ten cases of the kind, besides considerable experimental experience The flap undergoes structural changes which adapt it still better for the purpose The fat has retained its vitality and the fascia become transformed mainly into connective tissue with an abundance of elastic fibers

Tardy Rachitis—Sauer writes from Hamburg to describe twelve cases of rachitis developing in youths and young men from 15 to 22 in the last three years all with pains in the legs difficulty in walking especially in climbing stairs curvature of long bones or spine and cramps and tetany Most of them had had rachitis in childhood but without deformity at that time Severe tetany was manifest in six and in the others there were unmistakable signs of latent tetany He calls attention to this coincidence of rachitis and tetany, urging further investigation in this line One young man of 22 presented signs in addition indicating malfunction of the pituitary, suprarenals and parathyroids but the tetany was the predominant symptom Sauer theorizes that the parathyroids are mainly responsible for tardy rachitis with a defective diet as the occasional cause

Preliminary Irradiation of the Spleen to Prevent Hemorrhage at Operations—Kurtzahn's experiments were negative in that exposure of the spleen to the roentgen rays before an operation did not prevent the usual large losses of blood But it reduced small parenchymatous bleeding To estimate the effect he induced the patients to allow the removal of a rectangular piece of skin 1 by 2 cm, under local anesthesia, with care not to cut down into the subcutis As the scrap of skin was removed, a stop-watch was started and the blood from the small raw area was mopped up with sponges applied just below the raw area on the thigh The sponges were weighed beforehand and again at the end of the given period for the experiment the difference showing the amount of blood that had been lost

Local Temperature in Differential Diagnosis — Seitz announces as the conclusion of tests on thirty women with salpingitis a number with appendicitis and healthy women that the temperature in the vagina is higher with gynecologic inflammatory processes than with processes elsewhere as compared with the temperature in the rectum A higher vaginal temperature tends to incriminate an ovary or tube while a higher rectal temperature points rather to the appendix This difference is most instructive when it persists or is particularly striking, but the possible participation of the adnexa in the appendicitic process limits the significance of the finding In one case stenosis in the upper rectum was traced to a parametritic process by the higher vaginal temperature when the symptoms and an excised scrap had suggested malignant disease

Projectiles Left in the Thorax—Jehn and Mayer report some cases in which the projectiles had been left in lung or chest wall as apparently doing no harm, but they suddenly roused a year or more later and induced fatal gangrene

Gastro-Enterostomy with Loop of Ileum—The anastomosis with a loop taken too low down on the bowel entailed profuse diarrhea extreme emaciation, debility and other disturbances in the two cases reported by Dubs He operated two or more years later to relieve the unbearable condition and discovered that the preceding gastro enterostomy, done elsewhere had been done with the wrong loop by mistake Conditions had been only aggravated by the intervention

Jahrbuch fur Kinderheilkunde, Berlin

1921 **94**, No 6

*Idiopathic Hemorrhages in the Skin L F Meyer and E Nassau—p 341
Kidney Functioning in Infants III E Stransky—p 361
*Pseudohemophilia in Female Infants H Opitz and M Frei—p 374

Idiopathic Hemorrhages in the Skin—Meyer and Nassau describe a hemorrhagic disease in infants and young children which does not fit into the frame of any known derangement of the blood or vessels The minute extravasations in skin and mucous membranes occurred without known cause and without material disturbance of the general health The article is based on over thirty-five cases with from three to seven attacks of these minimal hemorrhages The extravasations in the skin were mostly the size of a pinhead, sometimes they were raised a little above the level of the skin, at some points there were larger patches of extravasation but it never extended into the subcutis A tendency to symmetrical arrangement was evident and the suddenness with which the extravasations occurred was striking as also their abrupt retrogression They lasted from less than one day to eighteen days The hemorrhages occurred also in mucous membranes bladder and kidney, mouth, eyes and nose but there was actual epistaxis only in one case They regard this tendency to hemorrhages in the skin and mucous membranes as of the nature of scurvy, and advise systematic addition of more vitamins to the diet Nearly 40 per cent of twenty-eight of these children died later from pneumonia anemia tuberculosis or other intercurrent disease suggesting a substandard constitution

Kidney Functioning in Infants—Stransky gave twelve infants urea, and he then recorded its elimination and the elimination of chlorids, spontaneously and under the influence of thyroid treatment and of treatment with theobromin, etc Among the other findings is that infants eliminate urea better than others, the output per kg being three or four times that of adults

Pseudohemophilia—The female infant of nearly 9 months had displayed a hemorrhagic tendency from birth, and had succumbed to the recurring losses of blood The blood had not shown the least tendency to coagulate and this was explained by the total lack of fibrinogen in the blood Rabe and Salomon have reported a similar case, listing it as hemophilia but Opitz and Frei reject this classification saying that this sporadic absolute absence of fibrinogen places these cases in a class apart

Mitt a d Grenzgeb d Med u Chir, Jena

1921 **33** No 3

*Occupational Deformity of Hand K Pichler—p 249
Chest Wall Supporting Function of Lung E Becher—p 257
*Air Embolism W Gundermann—p 261
*Muscle Symptom with Chronic Appendicitis N Wolkowitsch—p 283
Safety Precautions in Transfusion of Blood K Behne and K Lieber—p 291
Shock H Knorr—p 326

Deformity of Hand from Work—Pichler refers to the slanting outward of the fingers in persons who have done much hard work This shape of the hand is common with old articular rheumatism and in gout, but manual labor, such as carpenter work, is liable to induce it in the healthy

Air Embolism—Gundermann's experiments on dogs demonstrated that a small amount of air that does no apparent harm in the right heart kills infallibly when in the left heart The foam churned up gets into the minuter vessels of the heart and blocks them with consequent arrest of the heart The millwheel distance murmur the *mühlengerausch* with

contusion or other injury of the chest, can be accepted as pathognomonic for air embolism in the right heart Air in the left heart kills before the sound can become apparent Air embolism always occurs through a vein, and the lung acts as a filter to prevent the passage of air from the right into the left heart We can ward off danger of air embolism into the right heart by postural measures, but we have no means of warding it off from the left heart If air embolism has occurred, we must stimulate the heart action with all our energies With death from air embolism there is no recourse as all our measures are unable to restore function to the left ventricle In conclusion he warns to have necropsy follow the death as soon as possible

The Muscle Sign of Chronic Appendicitis—Wolkowitsch has found the abdominal wall muscles abnormally relaxed, especially on the right side, in cases of chronic appendicitis The muscles seem to have shrunk and to have grown less elastic This is in marked contrast to acute appendicitis With a tonometer it is easy to determine the difference in the tonus of the muscles on the two sides

Munchener medizinische Wochenschrift, Munich

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Causal Treatment of Arteriosclerosis E Heilner—p 443
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Wiener klinische Wochenschrift, Vienna

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Zeitschrift fur Tuberkulose, Leipzig

April 1921 **34**, No 1

*Influence of Food on Tuberculosis Mortality H Selter and Nehring—p 1
*Tuberculosis in the Young F Ickert—p 7
Constitutional Anomalies in the Tuberculous K Eichwald—p 17
Partial Antigens in Treatment of Tuberculosis H Feibes—p 29
*Allergy to Tuberculin K Dietl—p 38
Official Measures Against Bovine Tuberculosis H Haupt—p 45

Influence of Food on Tuberculosis Mortality—Selter and Nehring present tables which confirm the decline in mortality from tuberculosis as conditions in respect to food have improved in the last two years Their tables show further that the highest peak of mortality is generally in the first months of summer They explain this as the result of the poorer quality of the food toward the close of winter when the vegetables etc, have been kept so long that their vitamin content is low As soon as fresh vegetables come into the market the mortality drops and it is lowest in the fall Their charts show that the question of food is more important even than the housing question, although the housing question they remark—the overcrowding in the cities—has in many places reached an actually frightful stage

Tuberculosis in the Young—Ickert analyzes the conditions in regard to tuberculosis at Stettin during the last ten years comparing them with similar figures from other German cities and Holland During the war the mortality from tuberculosis among young children increased by 100 per cent, in school children only by 50 per cent, between the ages of 15 and 20 it increased by 200 per cent The infants suffered from the mothers becoming wage-earners, and the youths from their becoming wage-earners themselves Fully 62 per cent of the tuberculous youths were known to have a familial taint His figures confirm the great tendency toward healing of tuberculous processes during the school age They show further the necessity for guarding youths with special care, but above all, he declares, the protection against familial contagion of the younger children is the alpha and omega of the fight against tuberculosis

Allergy to Tuberculin—Dietl has collected various data bearing on the general and continuous allergy to tuberculin They suggest that the protecting function of the skin in the fight against tuberculosis has not been appreciated to the full A lively allergy on the part of the skin is not only a sign of the presence of large quantities of antibodies but it is a sign of a vigorously functioning skin organ We are justified, he asserts in ascribing an important role to the internal-secretion function of the skin organ, like all the endocrine glands, it is able to exert an action on distant organs, and thus may reenforce the lungs in their struggle against the disease

May 1921 **34**, No 2

*Pulmonary Tuberculosis in the Aged W Stephan—p 81
*Tuberculin Treatment A Offrem—p 94
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Apparatus for Artificial Pneumothorax R Lubojacky—p 102
Artificial Plus Spontaneous Pneumothorax H Maendl—p 105
Recent Treatments of Tuberculosis G Schroder—p 107

Pulmonary Tuberculosis in the Elderly—Stephan analyzes his experience with pulmonary tuberculosis in 338 men and 138 women over 40 years of age The early emaciation and anemia and absence of fever in the elderly may mislead the diagnosis Low blood pressure is also a special feature of tuberculosis in the elderly The blood pressure is an important aid in differentiating tuberculosis from other diseases of the lungs after 40 Sclerosis of the kidneys may be responsible for the hypertrophy and dilatation of the left ventricle often noted in chronic pulmonary tuberculosis in the elderly The tuberculous process in the lung also shows a special tendency to fibrous processes

Tuberculin Treatment—Offrem explains the tuberculin reaction as a consequence of the disproportion between the amounts of antigen and of antibodies This entails the production of anaphylatoxic substances, and these induce the fever and general and focal reaction The logical conclusion is to give more of the antigen, that is, of the tuberculin to induce production of an excess of antibodies He describes a few cases to show the benefit from this In one young man, for instance, the tuberculin treatment caused depression headache, and slightly febrile temperature but at the fifth injection the amount was increased from 0 1 to 0 7 c c and at once all subjective symptoms subsided and the temperature kept persistently normal

Urine Reaction in Tuberculosis—Liebhardt applied the urine test in fifty-one cases and confirms that there is a specific reaction with active tuberculosis but says that it is so slight and so inconstant that he does not ascribe much importance to this own-urine test by Wildbolz technic

Zentralblatt fur Chirurgie, Leipzig

May 14 1921 **48** No 19

Traction Diverticulum of Duodenum Hofmann and Kauffmann—p 650
Sacral Anesthesia in Difficult Cystoscopy H Brutt—p 653
*Fatal Hemorrhage After Puncture of Spleen Wohlgemuth—p 655
*Treatment of Paronychia A Schlesinger—p 656

Fatal Hemorrhage Following Puncture of the Spleen—Wohlgemuth states that in various affections of the spleen (abscesses hydatid and other cysts, tumors) many authors practice and recommend puncture of this organ for diagnostic purposes There are few references in the literature to the danger of serious hemorrhage after puncture of the spleen He therefore reports this fatal case A young woman, aged 26 had been admitted to the surgical ward with the tentative diagnosis of a subphrenic abscess on the left side A diagnostic puncture beneath the left costal arch in the anterior axillary line was made No pus was aspirated, and only a small quantity of blood containing hemolytic streptococci After the puncture the patient showed signs of weakness, the pulse was small and thready, the extremities began to get cold and pale, and death ensued at the end of ten hours At necropsy the abdomen was found to contain 2,500 c c of blood, partly coagulated and partly in a fluid state The

blood was for the most part in the small pelvis and in the region of the spleen On the lateral side of the spleen there were three puncture injuries about 1 cm apart The splenic pulp showed signs of sepsis and pea-sized abscesses were scattered through the left kidney From the three small puncture holes in the spleen 2½ liters of blood had escaped into the abdominal cavity within a few hours In this case the puncture of the spleen was accidental, but in any event when the left subphrenic space is punctured, the possibility of striking the spleen must be taken into account Therefore Wohlgemuth concludes puncture of the spleen through the abdominal walls is not advisable mainly because of the danger of hemorrhage but there are other dangers, in the presence of septic affections puncture of the spleen is especially dangerous, if the spleen has been punctured, either intentionally or by accident the patient should be carefully watched for the next twenty-four hours so as to take the proper action if there are any signs of hemorrhage

Treatment of Whitlow—Schlesinger has found that if in whitlow of the finger the whole nail or in case of a lateral starting point even half of the nail is removed an unpleasant condition arises, specially for patients who have to use their fingers for delicate work because of the resulting sensitiveness of the matrix For some time past he has prevented this condition by removing only the central portion of the nail the root if the starting point was centrally located With the shears he cuts into the nail on one side a little peripherad from the root he cuts the nail transversely to the other side holding the shears somewhat slantingly and with the pinchers he grasps the root and removes it with a twisting motion If as often happens, the suppuration begins near the root it is not necessary to remove more than the root even though the suppuration has extended some distance peripherad Even though almost the whole nail is loosened though suppuration the body may usually be preserved for a time until it is gradually replaced by the new nail Patients are able to use the finger sooner and the healing process is much shorter than as if the whole nail were removed

Zentralblatt fur Gynakologie, Leipzig

May 7 1921 **45**, No 18

Effect of Pregnancy on Cancer of the Uterus A Mayer—p 629
Rupture of Uterus in Diverticulum Pregnancy M Muller—p 638
*Free Autoplastic Peritoneal Grafts H Fuchs—p 643
Diagnostic Value of Vaginal Smear Cultures Lehmann—p 647

Autoplastic Peritoneal Grafts in Gynecologic Operations—Fuchs relates his experiences with unpedunculated grafts of peritoneum to cover defects in the peritoneum or reenforce a suture instead of drawing down omentum for this purpose Omentum contains adipose tissue and it does not belong in the gynecologic area Furthermore resection of omentum not infrequently entails embolism in the intestinal vessels, and there is the well known tendency for adhesions to develop Experiments on animals had shown conclusively that transplanted peritoneum became actually incorporated with the receiving tissue and was not merely replaced by growing connective tissue The tissue character of the transplant seems to be fully preserved He describes several cases in which he has used free peritoneal grafts with success in gynecologic practice While admitting that owing to the fewness of his clinical cases his experience can be regarded only as stimulative he thinks the procedure might possibly be further developed to advantage

May 14 1921 **45** No 19

A Case of Placenta Diffusa R Kapferer—p 661
Remarks on Iso-Agglutination K Landsteiner—p 662
*A Rectovesical Plus Rectovaginal Fistula H R Schmidt—p 665
Extravesical Opening of Nonsupernumerary Ureter Puppel—p 667
Abdominal Route in Operation on Vesicovaginal Fistulas Difficult of Access C U von Klein—p 672
Bladder Stone as Hindrance in Childbirth Ebbinghaus—p 676
Fistula of the Posterior Cervix Wall G Seiss—p 679
*Turpentine Treatment in Puerperal Sepsis A Hermstein—p 683
Turpentine Injections in Adnexa Affections C Hartog—p 686
Symphyseotomy Versus Cesarean Section F Engelmann—p 689
Criticism of Nerve Changes in Eclampsia T Fahr—p 690

Operative Correction of a Rectovesical Plus Rectovaginal Fistula—Schmidt describes a remarkable case from the Bonn Woman's Hospital In a girl of 8 part of the feces had passed through the vagina since the child was 3 years old according to the mother's statement, another portion of the feces passed with the urine through the bladder A safety pin had been found in the vagina when the child was a year old and Schmidt assumes that it must have been in the bladder first and passed thence to the rectum and escaped from there into the vagina leaving residua of peritonitis in its track From the vagina fecal matter was oozing and on catheterization dark-colored urine mixed with gas and feces was evacuated from the bladder A longitudinal slit 1 5 cm long led directly from the posterior vaginal wall into the rectum Through the rectum a second roundish opening was discovered 10 cm from the rectovaginal fistula, at the level of the upper edge of the symphysis A curved sound was passed from the bladder into the rectum The eczema was allowed to heal and the rectovesical fistula was closed through a laparotomy Adhesions between the flexure, uterus and pelvic wall were either loosened or divided Two slits in the large intestine from 2 to 3 cm long resulted and through one of these the fistula was located and the bladder separated from the rectum The fistula and the tears in the intestine were closed by button-hole sutures The closed tube on the right side was removed and the abdomen was closed without draining The second operation to close the rectovaginal fistula was not done until six weeks later Normal relations are restored and the child is perfectly healthy the urine being clear and containing no pathologic material

Turpentine Treatment in Puerperal Sepsis—Hermstein reports his experience with turpentine and camphor in the treatment of thirty cases of septic puerperal infection Following the example of Wederhake who highly recommends turpentine and camphor in the treatment of staphylococcus and streptococcus infections he injected 1 c c of a 20 per cent solution of turpentine in olive oil with 0 2 gm of procain under the periosteum of the iliac fossa Of the thirty patients twenty four showed more or less pronounced symptoms of puerperal sepsis He saw no evidence of a remarkable effect such as Wederhake and Zoppritz describe There was no improvement in the general status nor in the appetite The chills did not abate, the icterus did not disappear, the heart became weaker and weaker, and death ensued in seven cases after the first injection, in six after the second, once after the third and once after the seventh the period of treatment extending over from two to forty-seven days In nine cases ending in recovery, there was no drop in the high temperature even after two or three injections Defervescence did not occur for two or three weeks, and then only by lysis with occasional exacerbations In four of the remaining six patients the temperature (as high as 40 2 C in the evening) suddenly fell to normal the second day after an injection This phenomenon was so surprising that he was beginning to regard it as a possible effect of the treatment but doubts arose when in one case after three days of normalcy the temperature shot up to 39 and even 39 9 C but three days later dropped spontaneously just as another turpentine injection was about to be given

Nederlandsch Tijdschrift v Geneeskunde, Amsterdam

April 16 1921 **1** No 16

Present Status of Vaccine Therapy C H H Spronck—p 2116
*Vitamins E C van Leersum—p 2137
*Chronic Arsenic Poisoning M Elzas—p 2154
Vaccine Prophylaxis of Typhoid L Schaap—p 2158

Vitamins—Van Leersum reviews the research on accessory food factors in America saying that on his recent trip to America the rat colonies where vitamins are being studied, were my principal objective' "And what I saw of Donaldson's work at Philadelphia McCollum's at Baltimore Hart and Steenbock's at Madison, and Osborne's at New Haven to mention only a few far surpassed my anticipations" He describes their methods, and remarks that a standard rat cage for scientific research should be imposed by international agreement as exercise is necessary for the rats

Chronic Arsenic Poisoning—Elzas recalls De Haas' numerous cases of optic neuritis in which arsenic was found in the urine and says that the reason why others do not report

this coincidence oftener is because no one thinks of examining the urine for arsenic in cases of optic neuritis The necessity for more frequent examination for arsenic poisoning has been impressed on him anew by the recent death of a man of 30 healthy until 1918 when he developed polyneuritis edema and an eruption, and 0 0005 gm of arsenic per thousand was found in the urine He died six months after he had married and had his house repapered and 3 mg of arsenic per square meter was found in one of the wall papers

Acta Chirurgica Scandinavica, Stockholm

April 20 1921 **53**, No 5

*Peritoneal P eudomyxoma F Michaelsson —p 441
*Re ection of Calcaneum S Johansson —p 466
*Local Eosinophilia P Kuhnel —p 476
War Wounds of Knee W Korte —p 514 (In German)

Peritoneal Pseudomyxoma — Michaelsson describes (in French) with seven illustrations four cases of pseudomyxoma originating from the appendix

Resection of the Heel-Bone—In one of Johansson's two cases the calcaneum had been destroyed by a tuberculous process In the other case in a boy of 12, the destructive process was a septic osteomyelitis He urges the importance of getting the patient on his feet as soon as possible after the operation, but free from weight bearing (In German)

Local Eosinophilia—Kuhnel refers to the local eosinophilia in the vermiform appendix It occurs in the normal as well as in the diseased appendix, but the eosinophil cells seem to vary in number and in arrangement in different pathologic conditions in a characteristic and instructively different manner as he shows in four colored plates (In English)

Hospitalstidende, Copenhagen

April 27 1921 **64**, No 17

*Paratyphoid Epidemic in Hospital O Rosing Schow —p 257 Conc n
*Pernicious Anemia with Stricture in Intestine E Meulengracht —p 263

Paratyphoid—The paratyphoid in the recurring epidemics at the Viborg Hospital was so mild that in some of the cases only the positive agglutination reaction demonstrated that the subjects had been having the disease Rosing-Schow has found a record of a similar mild paratyphoid in a company of 849 soldiers in 1911 Only forty-nine presented the clinical picture of paratyphoid but 204 responded positively to agglutination tests His own research has confirmed that persons may be left paratyphoid bacilli carriers like the typhoid carriers Possibly the presence of gallstones may be the only cause for the lingering of the bacilli, but these mild cases and carriers may spread the contagion

Intestinal Stricture and Pernicious Anemia—Meulengracht summarizes five cases of pernicious anemia in which during life or at necropsy a stricture had been found at one or more points in the bowel All but one of the cases were published in Scandinavian literature and he adds a case personally observed to the list and refers to four other cases published with only meager details This coincidence of bowel stricture and the development of pernicious anemia—both such rare conditions—seems to be more than casual The strictures seem to be relics of old healed tuberculous ulcers there was no evidence of recent tuberculosis The diagnosis was made during life in only the English case The stagnation and decomposition of feces above the stricture, with absorption through the bowel wall of toxic substances with a special destructive action on the blood explains the development of the pernicious anemia The familial occurrence of pernicious anemia and other facts suggest that a predisposition is a necessary factor This assumption of mechanical obstruction in the intestines as the primary cause of pernicious anemia is sustained by cases in which the pernicious anemia develops in the pregnant, in subjects with tapeworm, and with gastric achylia The latter was evident in the five cases here described in which it had been tested The data presented all sustain the theory of the intestinal origin of pernicious anemia

May 4 1921 **64** No 18

*Megacolon in Adults T Iversen —p 273 Conc n No 19 p 289

Megacolon in Adults—In Iversen's two cases the enlargement was restricted to the sigmoid flexure and the rectum Resection of the enlarged sigmoid loop was done in the first case but the stump of the rectum could not be sutured end-to-end to the colon as intended, on account of the huge size of the lumen of the rectum The oral stump was brought out through the skin for a temporary anus, but the man died in collapse three days later In the second case no attempt at suturing was made The enlarged intestine was brought out and opened and a drain tube introduced, deferring the resection till later, merely making an artificial anus Thirteen days later the exposed loop was resected with the actual cautery The rectum contracted spontaneously and the artificial anus could be closed the sixty-third day The man of 61 was restored to complete health by the end of the third month and has been free from all intestinal disturbances during the more than two years since Iversen compares his experience with that of others in such cases adding that the length of the three months course of treatment was amply outbalanced by the perfect outcome

May 11 1921 **64** No 19

*Microcytosis with Hemolytic Jaundice H C Gram —p 294

Hemolytic Jaundice—Gram explains how the hemoglobin percentage can be normal in cases of hemolytic jaundice although the diameter of the erythrocytes averages less than normal In two cases described in girls of 12 and 18, the erythrocytes although abnormally small in diameter were much thicker than usual, so the total bulk was normal

Norsk Magazin for Lægevidenskaben, Christiania

June 1921 **82** No 6

Schick Reaction in Cour e of Diphtheria G Reder —p 409
*Trigeminal Neuralgia V Magnus —p 420
Transient Hypermetropia in Diabetes S Hagen —p 424
Splenectomy in Hemolytic Jaundice S Widerøe and O Jervell —p 428
Cerebral Hemianesthesia L Nicolaysen —p 434
*Tran fusion in Pernicious Anemia C Muller and F Jervell —p 442

Trigeminal Neuralgia—Magnus reports recurrence in twelve to eighteen months in all of the 29 cases in which he resected a peripheral portion of the nerve In 211 of the 248 injections of alcohol in 118 cases the pain subsided at once after the injection and one patient has had no recurrence for eight years and 4 for five years In the others the pain returned in a year or year and a half It was banished anew by injection of alcohol, but the respite was only temporary and operative measures were finally applied In 24 of the patients two or three of the branches were affected and hence no attempt at alcohol injection was made, and the sensory portion root of the nerve was resected at once In 4 cases he partially resected the gasserian ganglion with return of the pain in one case after a four year interval In 4 of the 31 root-resection cases a corneal ulcer developed, but he ascribes this to the patients' neglect to heed instructions to wear protecting glasses when exposed to wind, or disregard of early signs of irritation in the eye

Splenectomy with Inherited Hemolytic Jaundice—Another case is described here of pronounced benefit after splenectomy in chronic inherited hemolytic jaundice The patient was a woman of 30 and during the attacks of jaundice there were pains fever and other symptoms of cholangitis The jaundice appeared first after an attack of typhoid at 17 this evidently having aroused the latent inherited tendency An operation for the assumed gallstones revealed normal anatomic conditions in the biliary apparatus and the attacks of pain returned afterward as before until the splenectomy seven months later In ninety-three cases on record there were four fatalities In the case here reported the woman five months later still has occasional periods of slight jaundice and Botzian has reported a similar case of not complete cure after the splenectomy

Transfusion of Blood in Pernicious Anemia—This communication describes a case in a man of 58 almost moribund from pernicious anemia who improved remarkably after infusion of 1 000 c.c of citrated blood from four of his five sons The improvement did not last long and he died the seventh month The length of survival of the infused erythrocytes is recorded for each infusion

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INTERRELATIONSHIP OF FUNCTION OF THE THYROID GLAND

AND OF ITS ACTIVE AGENT, THYROXIN, IN THE TISSUES OF THE BODY *

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ROCHESTER, MINN

The highly essential function of the thyroid is the elaboration and delivery to the body of thyroxin The gland secretes and stores in its acini the so-called colloid It seems highly probable that the latter function is an accessory to the production and storage of thyroxin, and that in it is stored iodin for the elaboration of this agent There is no definite evidence that the thyroid has any other function

THYROXIN

In 1914 Kendall separated from the thyroid gland the pure chemical compound thyroxin He proved thyroxin to be its active agent In 1915 in attempting to correlate the available data with regard to the function of the thyroid gland and of its active agent, thyroxin, in the tissues of the body, I formulated these deductions

1 Thyroxin is active directly or indirectly in the cells throughout the tissues of the body

2 Thyroxin is an agent hastening the rate of formation of a quantum of potential energy available for transformation on excitation of the cell

3 Hyperthyroidism is the physiologic status of an individual otherwise normal when the thyroxin in the tissues is sufficient to hold the basal metabolism above normal

4 Hypothyroidism is the opposite of hyperthyroidism

5 All the phenomena in pure hyperthyroidism are those that must attend a sustained elevation of the basal metabolism

6 The status of the hyperfunctionating adenomatous goiter is the result of a pure hyperthyroidism

7 The status of exophthalmic goiter is not accounted for by a pure hyperthyroidism

Various observations correlated on these working hypotheses led me, in 1917, without previous estimates of the basal metabolism following the administration of thyroxin, to give intravenously to a myxedematous patient, supposedly having no thyroid gland, 22 mg of thyroxin and to anticipate the reaction which followed The reaction was approximately the average of those obtained from several hundred doses since administered From these studies the following deductions may be drawn

1 After the administration of a single dose of thyroxin sufficient to bring the basal metabolism to normal, the physiologic status of a thyroidless patient becomes normal in from ten to twelve days, remains approximately normal for ten days and returns to the preexisting status in from five to seven weeks

2 The amount of thyroxin in the tissues (exclusive of the thyroid) of the average normal man is approximately 14 mg Kendall, from an analysis of the iodin content in the tissues, recently estimated the amount to be 14 mg

3 The average daily exhaustion of thyroxin in the tissues is between 0 50 and 1 mg

4 A shift of 1 mg of thyroxin in the tissues of the body is accompanied by a corresponding rise or fall of between 2 and 3 per cent in the basal metabolism

5 Fourteen milligrams of thyroxin given to a thyroidless person is not fully exhausted until from the end of the fifth to the eighth week

Two milligrams of thyroxin a day may hold the basal metabolism from 20 to 30 per cent above normal, 3 mg a day may hold the basal metabolism 50 per cent above normal

Fifteen milligrams of thyroxin given intravenously to patients with exophthalmic goiter who have a basal metabolism above + 65 may not cause notable reaction, when given to patients having large colloid goiter with bruit, the bruit disappears and the thyroid shrinks rapidly but constitutional reaction may be absent With these two exceptions a sustained elevation of the basal metabolism has followed every intravenous dose of more than 1 mg of thyroxin

The drop in the basal metabolism following the traumatic destruction of the entire thyroid, its resection for hyperfunctioning adenomatous goiter, the administration of a large dose of thyroxin or the withdrawal of this agent after a period of daily administration is always gradual, extending over days These observations indicate that the thyroid under average normal conditions maintains an approximately constant level of thyroxin in the body and that an elevation of basal metabolism of more than 5 per cent, followed within twenty-four hours by a corresponding drop, cannot, except possibly in relatively high degrees of hyperthyroidism, be attributed to fluctuation in the thyroxin content of the body

Without knowing the exact mechanism of the normal stimulation of the thyroid we can assume that it is brought into play by a drop in the amount of thyroxin in the tissues of the body This being true, the daily administration of 1 mg or more of thyroxin should place the thyroid at partial or complete rest, at least so far as the production of this agent is concerned Following this hypothesis, the daily administration of from 0 5 to 1 mg of thyroxin to a normal person might not be attended by any general physiologic reaction We have given a daily dose of 1

* Address of the chairman of the Section on Practice of Medicine read before the joint meeting of the Section on Practice of Medicine the Section on Pharmacology and Therapeutics and the Section on Pathology and Physiology at the Seventy Second Annual Session of the American Medical Association Boston June 1921

* This paper and those by Drs Lusk Benedict and Boothby which follow are a part of a symposium on Basal Metabolism The remaining papers by Drs Means and Du Bois together with the discussion will appear next week After publication in THE JOURNAL the complete symposium will be republished in pamphlet form

mg to a number of persons, apparently having a normal thyroid function, for months without any deflection of the basal metabolism from the normal There are some objections to drawing definite conclusions from these results and from other observations which indicate that the thyroid gland is placed at rest by the administration of thyroxin, however, the mass of evidence supports the hypothesis

There are approximately 10 mg of thyroxin in 150 grams of desiccated thyroid The physiologic reaction following the administration of thyroxin is, so far as we have made any observation, identical with that following the administration of the fresh or desiccated thyroid gland containing this agent Absorption from the intestinal tract is, however, very erratic and desiccated thyroid cannot be given intravenously

A daily oral dose of 1 6 mg of thyroxin will hold the basal metabolism of most thyroidless individuals within the normal limits In most instances the dose established two or three years ago has not had to be changed, the basal metabolism estimates being within 5 per cent of the average normal each time the patient has returned fr observation A daily dose of from 2 to 3 mg of thyroxin or 20 grams of desiccated thyroid given by mouth will not fluctuate the basal metabolism or cause any physiologic reaction in many patients in whom this dose given intravenously causes the quantitative reaction almost standard for myxedematous patients In isolated cases, 250 grams of desiccated thyroid has not caused any reaction This failure of absorption or destruction of thyroxin before reaching the general circulation is characteristic of a considerable percentage of patients who have diffuse colloid goiter and of patients in the various groups having low basal metabolism readings not attributable to a primary hypothyroidism This failure of absorption, the difficulty of carrying out daily intravenous administration over a long period, the probability that the thyroid is placed at partial or complete rest, and evidence that under certain conditions the thyroid picks up and stores part of the thyroxin, have been most baffling in the attempt to study quantitatively the reactions of persons having functioning thyroids

As thyroxin, other factors remaining constant determines the rate of transformation of energy in the organism, it can be assumed that the rate of exhaustion of thyroxin for a given period is determined, to a large extent at least, by the total transformation of energy That the rate of exhaustion relative to the total metabolism is not the same in all the organs or reactions of the organism is probable There is much to suggest that the rate of exhaustion of thyroxin in the female is higher than in the male

It seems probable that the relation of the rate of exhaustion to the total metabolism for a given period might be roughly determined by fluctuating stress on a thyroidless person whose basal metabolism has been held at normal sufficiently long to permit of readjustment of physiologic functions We have not, up to the present, been able to control such a patient for the required time

It is quite probable that there is a gradual adaptation downward in the thyroxin content of the tissues, and hence in the thyroid activity in some of the classifiable and unclassifiable conditions not primarily hypothyroid, with which a low basal metabolism is associated The clearest evidence of this is the gradual adaptation downward of the basal metabolism to long continued low food intake The term secondary hypothyroidism might, though perhaps inadvisably, be applied to such a status That a disuse atrophy may result is possible, if not probable Assuming that the rate of exhaustion of thyroxin in the tissues should be determined largely by the total energy transformation, and hence that disuse atrophy and inability of the thyroid to respond to a suddenly increased demand might follow a prolonged low food intake, three patients with hysterical dysphagia, who had lived and worked hard on a very limited liquid diet for a number of years, were held under observation following the sudden relief of the dysphagia and return to a normal diet As anticipated, the basal metabolism of each patient dropped from 10 to 22 per cent below normal in three weeks, and the edema, the skin changes, and other minor evidence of myxedema developed This observation has added significance in the light of the following facts

The basal metabolism of a thyroidless individual is from 30 to 40 per cent below the average normal The edema of myxedema develops, or at least becomes recognizable, when the basal metabolism drops from 15 to 17 per cent below the average normal In a myxedematous person having a basal metabolism ranging near this point, the edema may appear after stress, and disappear after rest Sustained stress exhausts the thyroxin more rapidly than it can be produced by the thyroid and the basal metabolism drops a few points A recognizable edema may disappear and reappear with a shift of 1 mg or less of thyroxin in the tissues of the body A drop in the basal metabolism to 40 per cent below normal does not cause edema in the classifiable and unclassifiable conditions not due primarily to hypothyroidism This relation of edema to the basal metabolism is of the highest significance in the differential diagnosis of primary hypothyroidism and of the other conditions with which a low metabolism is associated

If we are right in the inference that the amount of thyroxin in the tissues of the body throughout the range of normal or near normal conditions is fairly constant, and that the rate of exhaustion is determined to a high degree by the total metabolism or fluctuations in specific metabolic reactions, the thyroid is subject to the greatest stimulation when the amount of this agent in the body is lowest, that is, when the tendency is toward hypothyroidism This indicates that increased vascularity and histologic evidence of increased activity in the thyroid should not be accepted, without hesitation, as evidence of hyperthyroidization of the tissues of the body This, of course, does not apply if the stimulus to the thyroid is not originating in the demands of the organism, as is probably true in pathologic conditions, such as exophthalmic goiter and hyperfunctioning adenomatous goiter

The ease with which the phenomena attending an elevation of the metabolism and an increased rate of exhaustion of thyroxin in the tissues from stimulation originating in the central nervous system and the resulting evidence of stress on the thyroid may be confused with the phenomena of hyperthyroidism is apparent when we recognize that but for the transformation of part of the energy to motion, the phenomena of physical exertion and the resulting fatigue could be distinguished only with difficulty from those of pure hyperthyroidism The phenomena of mild exophthal-

mic goiter are so much like the psychoneurotic manifestations due to lack of assurance that the thyroid is frequently resected for the latter condition The lack of assurance is frequently cut out, and both the physician and patient satisfied, the latter enjoys a period of ease after demanding restitution of fees from previous consultants

THYROID GLAND

The normal thyroid gland is constituted of acini containing colloid and lined with relatively dormant appearing cuboidal or low columnar epithelium supported by the sustentacular tissue common to gland structure Various interpretations have been placed on the groups of cells in the stroma of the gland, however, they are not known to have any definite specific function peculiar to the thyroid

Three departures from this somewhat conventional picture of the normal thyroid gland dominate the study of the relationships of the anatomic changes and functional activity of the thyroid, and form the basis for the classification of conditions grouped under the term goiter (1) hypertrophy of the alveolar epithelium, (2) an increase of the intra-alveolar colloid, and (3) the development of new alveoli On these changes, goiter may be primarily classified as hypertrophic, colloid and adenomatous

Diffuse colloid goiter and diffuse hypertrophic goiter may be considered anatomic expressions of functional disturbance in prenatally developed thyroid acini Adenomatous goiter is new tissue developing postnatally from the stimulation of embryonic cells All these types may be present in the same gland Adenomatous tissue may be either encapsulated or nonencapsulated

Three clear-cut abnormal physiologic states are associated with anatomic changes in the thyroid (1) pure hyperthyroidism, (2) pure hypothyroidism, and (3) exophthalmic goiter

A definite syndrome of hyperthyroidism is, with rare exceptions, associated with diffuse hypertrophic or adenomatous goiter, or follows the administration of thyroxin

The assumption that the status of adenomatous goiter is attributable simply to an excess of the normal thyroid product (pure hyperthyroidism) rests largely on a correlation of at least approximately accurate observations They are

1 The physiologic status of a thyroidless individual returns to normal when the basal metabolism is brought to normal by the administration of thyroxin

2 The phenomena induced by the administration of thyroxin and the phenomena associated with adenomatous goiter are identical and are those that must attend a sustained elevation of the metabolism

3 These phenomena disappear with the dropping of the basal metabolism to normal within three weeks after the enucleation of the adenoma

The status of exophthalmic goiter, while in the main hyperthyroid, cannot be attributed wholly to an excess of the normal thyroid product The characteristics of exophthalmic goiter may be due to an incomplete thyroxin molecule

The capacity of the normal thyroid to elaborate thyroxin without notable histologic change is evidenced by the failure to demonstrate such changes after the resection of at least three fourths of the thyroid That the thyroid is subject to the laws of rest and repose, that it stores thyroxin, iodin and colloid, and that during periods of stress it absorbs a portion of the colloid, utilizes the stored iodin and delivers thyroxin to the blood stream, that hyperthrophy is indicative of a relatively high degree of stimulation, that intensive stimulation will cause hypertrophy and hyperfunction, and that the intracellular changes are indicative of the secretory processes of the thyroid vesicles functioning under normal conditions can be accepted with little, if any, reserve However, several themes that pervade, if they do not dominate, the literature on the thyroid gland are open to question (1) Hypertrophy is indicative of the production of the active agent of the thyroid in excess of the average normal, (2) the storage of colloid in excess of the normal is indicative of a resting phase of the thyroid and is a result of damage from preexisting hypertrophy and the thyroid at rest
hyperplasia, and (3) the administration of iodin places

For evident reasons we might anticipate that the administration of thyroxin to the point of supplying the demands of the organism would place the thyroid at rest and that the administration of iodin, if the supply of this element were otherwise deficient would favor thyroid productivity

Areas of hypertrophy, "some hypertrophy" (MacCarty), are present in such a percentage of all thyroids resected that this degree of hypertrophy has little, if any, tangible significance In exophthalmic goiter, diffuse hyperthrophy of the thyroid is rarely absent, but even in severe cases it varies from the most marked degree to the vanishing point Diffuse hypertrophy unassociated with a syndrome that is or is not distinguishable from that of exophthalmic goiter is present in approximately only one or two of each thousand human thyroids resected Many patients in this group later develop frank exophthalmic goiter That all such thyroids are a part of this complex is possible, if not probable Whatever their significance, the incidence demonstrates that they have no relation to pregnancy, to adolescence, and to the conditions supposed to throw stress on the thyroid and produce diffuse hypertrophy On the other hand, in each thousand thyroids resected for exophthalmic goiter in patients with a high basal metabolism and moderate exophthalmos, from one to three show only pure diffuse colloid goiter I am confident that hypertrophy was present at the time the exophthalmos developed

The thyroids of many domestic and wild animals become markedly hypertrophic with changes such as of surroundings and diet, without any detectable constitutional disturbances When hypertrophy is present the findings are often more readily attributable to causes throwing stress on the thyroid than to an excess of thyroxin in the tissues This hypertrophy can be prevented or caused to disappear by the administration of iodin The same is true of the hypertrophic goiter of fish (Gaylord) The goiters of pig cretins are hypertrophic and the inference that they are under high stimulation is warranted Iodin administered to the mothers prevents this type of goiter and the hypothyroidism, the immediate cause of the goiter, not the result

The remnant of the thyroid in human cretins, if present, is usually distended with colloid Diffuse hypertrophy is sometimes present The nodules found in cretins usually shrink rapidly following the administration of thyroxin Nodules 5 cm in diameter may be reduced

within three or four weeks to the point of being barely palpable It has long been known that iodin favors the disappearance of colloid goiter Marine has demonstrated that iodin administration prevents the development of diffuse colloid goiter in man What may be considered the acme of diffuse colloid goiter is most prevalent from the seventeenth to the twenty-first year Each lateral lobe may be as large as a good sized fist The thyroid arteries are distended and roll under the finger like a large lead pencil, bruit and loud thrill are present, and in the majority of cases the basal metabolism is from 8 to 15 per cent below the average normal In from twelve to twenty-four hours following the administration of thyroxin, the thyroid vessels are not palpable, and the bruit and thrill are no longer audible The gland rapidly shrinks in size, in some instances becoming barely palpable in three weeks The continuous administration of thyroxin prevents the reappearance of the goiter, however, on withdrawal of the drug, the thyroid may rapidly attain its original size After absorption of the colloid, iodin in many instances at least will prevent its redeposition That colloid goiters are capable of producing thyroxin if sufficiently stimulated is demonstrated by the fact that the basal metabolism drops but little, if any, following a resection of the gland

The majority of diffuse colloid goiters that have come under our observation since we have fully recognized the fallacy in the absorption of thyroid preparations have been made to disappear or become barely palpable The thyroid of the human cretin distended with colloid reacts as does the colloid goiter of adolescences The preceding observation on the occurrence of colloid and hypertrophic goiter and their reactions to thyroxin and iodin administration can be correlated on the hypothesis which, if correct, is essential to our understanding of the relation of functional activity to anatomic changes in the thyroid Without definite knowledge of the exact mechanism we can assume that the normal stimulation of the thyroid is brought into play by partial exhaustion of the thyroxin in the tissues Factors interfering with the production of this agent lower the amount delivered from the thyroid There may be several such factors The one known factor is an actual or relative shortage of iodin A thyroid so handicapped, if sufficiently stimulated, can produce a normal amount or even an excessive amount of thyroxin, however, relative to the normally functioning gland, it tends to lag behind the demands of the tissues, that is, it does not respond quantitatively to stimulation as does the normal thyroid The degree of stimulation of such a gland is above the average and probably increases as the thyroid content of the tissues drops Basal metabolism estimations suggest that this lag expressed as the amount of thyroxin in the tissues never exceeds 4 mg The human gland acting under these conditions deposits an excess of colloid in its acini This constitutes the diffuse colloid goiter of adolescence Diffuse colloid considered as an entity probably never hyperfunctions That glands of most animals acting under the same or similar conditions develop diffuse hypertrophy seems probable

It might be contended that the deposit of colloid interferes with the function of the thyroid and thus causes a shortage of thyroxin in the tissues The mass of data does not correlate with this theory as it does with the theory attributing the mild hypothyroidism and colloid deposit to a common factor namely, stimulation of the thyroid acini which are in some way handicapped in their functional ability A hypothyroidism of sufficient degree to cause edema is, according to our observations, never due to goiter

ADENOMATOUS GOITERS

Goiters usually classified under the terms "simple," "endemic," "adolescent," and so forth, are diffuse colloid, adenomatous, or a combination, particularly at their inception, of the two types The majority of such goiters are first noticed during the latter half of the second decade The colloid goiter usually disappears before the twenty-fifth year, however, there is a tendency for a thyroid once overloaded with colloid, irrespective of its functional activity, to retain more than the normal amount, that is, sufficient to make the gland easily palpable throughout life The adenomatous nodules, often during the early part of their history buried in colloid goiter, never disappear, although they fluctuate much in size with their colloid content, vascularity, and degenerative changes

The administration of iodin may prevent the formation of colloid goiter That it may also be almost equally efficacious in the prevention of adenomatous goiter in adolescence seems probable In fact, if the theme here presented is correct, to control adolescent goiter means to control adenomatous goiter also

Two theories have prevailed with regard to hyperfunctioning adenomatous goiter first, that the adenomatous tissue elaborates and delivers an excess of thyroxin, and second that the adenoma in some way stimulates the surrounding thyroid tissue to hyperfunction Though the question must still be considered open, the evidence correlates best with the theory that the adenomatous tissue hyperfunctions Irrespective of the question of which type of tissue furnishes the excess of thyroxin, there is no doubt that the adenomatous tissue actually elaborates thyroxin and stores colloid and iodin In the following discussion of adenomatous goiter, the facts may be coordinated with either theory, however, I have assumed that the adenoma hyperfunctions

The majority of adenomatous goiters have their inception in colloid goiter The embryonal cells seem to be stimulated through the same mechanism that forces the postnatally developed gland to maintain a normal level of thyroxin in the tissues Possibly we should look on adenomatous tissue as a compensatory attempt Such a theory does not eliminate the possibility that the formation of the new tissue may in some instances be excited by local irritants Early in its life history, new adenomatous tissue can not function A number of observations suggest that it can elaborate and store colloid long before it can elaborate and store thyroxin It seems more prone, as does the prenatally developed thyroid tissues, to store colloid if it is unable to elaborate thyroxin or the rate of stimulation of the thyroid is above the average normal Only rarely are the factors such that the adenomatous tissue will function, at least to the point of causing hyperthyroidism, before the latter half of the third decade although, as a rule, it is palpable in the second decade of life The average interval between the time the adenomatous goiter is first noticed and the onset of hyperthyroidism, including only those that hyperfunction before coming under observation is seventeen and one-half years While the normal

stimulating mechanism is a factor in the inception of the adenomatous goiter, once this tissue has started to function, it does so erratically and without relation to the needs of the individual This observation is borne out by the fact that the basal metabolism drops to normal, but not below, within eighteen days after the resection of the adenomatous tissue, and there is no tendency to a recurrence of the hyperthyroidism

Six patients have come under my observation who, following very extensive resection of the thyroid for combined adenomatous and colloid goiter, have a basal metabolism from 12 to 17 per cent below normal and a recurrence of multiple adenomas These adenomas react to thyroxin as does colloid goiter One of the patients has been under almost constant observation for two years When the basal metabolism is brought to normal, the adenomas 5 cm in diameter almost disappear She can estimate her basal metabolism within 5 per cent, if it is not elevated above normal, from the size of the adenomatous nodules

While the hyperthyroidism may come on suddenly and its course may be marked by waves of high intensity, it is characteristic of the disease to come on insidiously and for a long period, not infrequently for years, to run a course of low intensity, and to be brought to attention by the phenomena attributable to fatigue and by resulting degenerative changes, rather than by changes indicating a hyperthyroid state Some patients may be hyperthyroid for many months either from hyperfunctioning adenomatous goiters or from the administration of thyroxin and wholly unconscious of any departure from the normal status Those of a nervous temperament, particularly the type prone to develop cardiac neuroses, are more apt to be disturbed

The development of diffuse colloid goiter in man other factors remaining constant, is determined by an equation taking into consideration the iodin available to the thyroid and the rate of exhaustion of thyroxin in the tissues Infection of the organism at least when attended with fever, probably increases the rate of exhaustion of thyroxin in the tissues That infection of the thyroid can stimulate the gland to hyperfunction is indicated by a moderate degree of hyperthyroidism early in the history of patients having diffuse thyroiditis ultimately resulting in myxedema That introduction of bacteria into the digestive tract is an important factor, if not the primary cause of endemic goiter, is fairly well established As to how the organisms act in the host, there is no definite evidence That the bacterial flora of the digestive tract may sufficiently interfere with the absorption of the small amount of iodin in the available diet is a possibility, particularly in areas in which this element is relatively small The relation of the bacterial flora to the available iodin would well explain the geographic distribution of endemic goiter

Potency of Antimeningococcic and Antipneumococcic Serums—Since December 1917 all lots of serum intended for use against meningococcus infection or pneumococcus infection (Type I), and subject to control by the Treasury Department, have been tested for potency at the hygienic laboratory Tests for potency are made at the manufacturing establishments, but before being released for interstate sale, each lot must pass the official test at the hygienic laboratory Under these provision, 461 lots of antimeningococcic serum and 781 lots of antipneumococcic serum have been tested Numerous tests have also been made on serums from other sources—*Pub Health Rep*, Nov 21, 1919

THE MEASUREMENT AND STANDARDS OF BASAL METABOLISM*

FRANCIS G BENEDICT, PH D
BOSTON

That a strenuously active man, engaged in severe muscular work, gives off heat is not surprising to any one, but it is seldom fully realized that, even with a man in complete muscular repose, such as a bedridden patient, the end-result of all the internal glandular and muscular activities incidental to the maintenance of life is *heat* So truly is the heat output determined by the intensity of vital processes that, conversely, it may be stated that the level of vital activity may be inferred from the amount of heat produced This caloric index of metabolic intensity is of such a transient and fugitive nature that unusually complicated technic is required for its determination, and this fact has retarded not only its use but, more especially, an appreciation of the significance of its relationship to physiologic and pathologic research Since heat is the end-product of all vital transformations, the latter could, theoretically at least, best be measured by some method of determining directly the heat given off from the body Such a method calls for an extremely elaborate and costly apparatus, a calorimeter, which, to be of sufficient size for measuring directly the heat production of the human body, assumes an appearance so formidable as to unnerve completely the best of hospital technicians Fortunately, other, indirect methods for estimating heat production are available While heat is the end-result of glandular and muscular activity, oxidative processes are essential factors in these transformations Thus the intake of oxygen is essential to combustion, while the production of carbon dioxid makes up a very large part of the total oxidative activities of the body Therefore, if one can measure accurately the carbon dioxid production or, still better, the oxygen consumption, a very close estimate of the total heat production, and consequently, of the end-result of the glandular and muscular activity may be secured

COMPLICATED TECHNICS

The technics available for these measurements of the respiratory products have for many years been very complicated, involving in their most elaborate form a respiration chamber with its numerous appurtenances In a somewhat less elaborate form, a mouthpiece or mask, together with valves and some appliance for measuring the total expired air, such as either a gas meter, a rubber bag or, more commonly, a spirometer, is necessary But in addition to either of these forms of apparatus there is required that *rara avis*, a skilled gas analyst, on whom rests the determination of the changes in the composition of outdoor air, as it leaves the lungs All of these methods have been in the special respiration laboratories, but have been introduced into hospitals in general to only a very small extent Hence, clinical studies of gaseous metabolism have been made only by the relatively few workers in special laboratories, who have in but few instances been simultaneously clinicians

* From the Nutrition Laboratory of the Carnegie Institution of Washington Boston
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A SIMPLE TECHNIC

The Nutrition Laboratory has for many years been involved in a study to simplify the costly experimental technic for the measurement of gaseous metabolism The final outcome of this study has been the development of a portable respiration apparatus that measures with extreme accuracy and great rapidity the oxygen consumption of human beings Based on the important observation that when a human subject breathes pure oxygen the amount of oxygen taken up by the blood is the same as when ordinary air is inspired, a relatively simple technic for the measurement of the oxygen consumption of man, involving neither respiration chamber, valves, weighings nor gas analyst, has been evolved Of the two respiratory gases, oxygen and carbon dioxid, this apparatus measures the oxygen consumption alone But since it is the common experience of all clinics that, in those experiments in which where, by the older methods, both carbon dioxid and oxygen are determined, the oxygen consumption alone is of prime significance in the vast majority of pathologic cases, it can be seen that a method restricted to oxygen determinations will supply the needs for a large series of pathologic problems

Normal control experiments, which are a necessary feature preliminary to all studies in disease, may, with the wide distribution of the portable respiration apparatus, be of great service to physiology and, ultimately to pathology, provided such tests are intelligently planned and skilfully carried out Indeed, the optimist can properly take the ground that whatever faults may arise in studying pathologic cases, whatever misinterpretations of data may be made, the development and wide distribution of the respiration apparatus can be fully justified by the contributions that each user of the apparatus can rightly be expected to make to our knowledge of normal metabolism

REQUISITE CONDITIONS

In basal metabolism measurements, the requirements are that the subject should be, first of all, in the postabsorptive condition, that is, at least twelve hours after the last meal, and secondly, that he should be in complete muscular repose, preferably lying quietly without conversation or any psychic excitement for a half hour before the test begins The room temperature should be not far from 20 C, and the subject should be sufficiently clothed or covered with bedding, to be perfectly comfortable It is our custom in the Nutrition Laboratory, in order to rule out the possibility of a slightly febrile condition, to note the buccal temperature during the period of preliminary repose Every effort should be made to secure a series of pulse rate records This measurement may be taken at the wrist during the actual experiment itself and during the preliminary period, but is better taken by means of ear pieces attached to a Bowles stethoscope resting over the apex beat of the heart

To be fully comparable with previous work, all normal experiments must be so conducted as to recognize certain fundamental points Not infrequently the value of earlier work is greatly vitiated by the absence of certain fundamental physiologic measurements For instance, a record of the sex, age, nude weight, and the height without shoes, must be considered as an essential part of the report In addition, since it should be the aim of modern experimenters to secure better data, it is not unreasonable to ask that two new measurements, of value in determining the nutritional state of a subject, be supplied One of these is the sitting height, the importance of which has recently been emphasized so strongly by Dreyer[1] of Oxford and by von Pirquet's[2] use of it in the nutritional tragedy in Vienna Furthermore, it is believed by Dr C B Davenport that the investigator, at the moment of obtaining the sitting height, should also measure the sitting height to the suprasternal notch, i e, eliminating the length of neck and head, as this additional evidence will prove of even greater value in later years Finally, as a part of the records of all those having a portable respiration apparatus at hand, with its carefully calibrated spirometer, there may reasonably be expected a measure of the vital capacity, which has also been emphasized by Dreyer[3] and by Peabody[4]

ACCURATE MEASUREMENTS

Moreover, operators should be careful to record the degree of drowsiness of the subject When the mouthpiece is used, unless the jaw is very much relaxed and opened, accurate oxygen measurements can readily be made with the portable respiration apparatus, and thus the question of sleepiness will not affect the technic Parenthetically, I should like to add that a new procedure has recently been tested out in the Nutrition Laboratory, which serves admirably as a proof of absence of leak in these mouthpiece tests Ordinarily the readings on the millimeter scale connected with the spirometer bell are taken only at the beginning and the end of a ten-minute period In addition to these regular readings, as mentioned in various articles describing our technic,[5] it is now our custom to take a reading at about the middle of the period, say after four or five minutes, and immediately thereafter we place on top of the spirometer bell a weight, of usually not far from 35 to 40 gm This weight remains on the bell until just before the final readings Obviously, if there is a leak around the mouthpiece or any part of the apparatus, the weight on the spirometer bell will result in the expulsion of air from the apparatus into the room, thus indicating a larger oxygen consumption Consequently, by computing the oxygen consumption during the first five minutes and comparing it with that during the last five minutes, one can invariably detect the presence of a leak

Still better, if one attaches a small writing point to the counterpoise weight of the spirometer bell and allows this to write over the surface of a smoked paper kymograph drum, a remarkably satisfactory picture of the entire respiratory process can be obtained from the beginning to the end of a test The straight line curve, touching the points representing the end of each expiration, shows a general upward tendency as oxygen is consumed, and the bell descends, and forms an angle with the base-line of the kymograph paper varying by only two factors, first, the rate of speed

1 Dreyer Georges and Hanson G F The Assessment of Physical Fitness London Cassell & Co 1920
2 Von Pirquet System der Ernahrung Berlin 1917 **1** 48 ff
3 Dreyer Georges Lancet **1** 365 (March 10) 1917
4 Peabody, F W and Wentworth J A Clinical Studies of the Respiration IV The Vital Capacity of the Lungs and Its Relation to Dyspnea Arch Int Med **20** 443 (Sept) 1917
5 Benedict F G Boston M & S J **178** 667 1913 Hendry M F Carpenter T M and Emmes L E Ibid **181** 285, 334 363 (Sept 4) 1919 Benedict F G Ibid **182** 243 (March 4) 1920 Benedict F G and Collins W E Ibid **183** 449 (Oct 14) 1920

of the kymograph and, second, the rate of absorption of the oxygen Assuming that these two factors remain essentially constant throughout a ten-minute period, we can see that if there is a leak when the weight is on the spirometer bell the last half of the curve will have a decidedly different angle Thus it is possible by either of two methods to detect absolutely the presence of a leak, particularly in experiments during sleep When the subject is awake, our own experience has been that it is very difficult to secure a leak around the mouthpiece For all of our research work the graphic method is invariably employed

If these precautions are observed, records of basal metabolism are readily made, and the difficulty then shifts from the experimental technic to the scientific interpretation of the results

INTERPRETATION OF RESULTS

The simplification of the technic for determining the respiratory metabolism is justifiable on the grounds that such technic in the hands of well-trained men will enable a much larger and more accurate accumulation of scientific data The simplification of such technic is, on the other hand dangerous when it makes it possible for the tyro to secure measurements, which frequently neither he nor any of his associates are in a position to interpret intelligently and from which it is possible for him to draw deductions that are not only erroneous but since they not infrequently may influence for or against operative procedure, may actually be of serious harm This rapid and accurate method makes general use of gaseous metabolism measurements justifiable, therefore, only with the proviso that the operators have, first, acquired carefully and intelligently a relatively simple technic and secondly, that in attempting to analyze or utilize results they have previously made an intense study of the significance of respiratory metabolism Unfortunately the intellectual training of the operator has by no means progressed so rapidly as has the simplification of technic, and today we face a situation in which manufacturers are ready to supply almost unlimited numbers of simplified respiration apparatus, which are in a too great number of instances secured and put to use by operators wholly lacking in this fundamental and important education

Even the most skilled and most experienced clinicians make at times sorry exhibits of their use of apparatus of this type The apparatus is simple to use We believe that an intelligent high-school girl can, after a few days of training, secure most satisfactory measurements of the oxygen consumption No effort of the Nutrition Laboratory can, however, make up for the deficiency of theoretical consideration of the significance of basal metabolism measurements on the part of the user of these readily acquired metabolism measurements

STANDARDS OF ANALYSIS

At the very start the results obtained in suspected cases must be scanned with an idea as to their normality or their relationships to normal results, and immediately great diversity of opinion arises as to what is normal It must be realized that thus far the total number of published results for normal individuals, measured by perfectly comparable technics, is only in the hundreds From these data, a large proportion of which has been accumulated in the Nutrition Laboratory, at least three sets of standards have been proposed (1) the earliest, by Aub and Du Bois,[6] (2) the more complete biometric analysis by Harris and Benedict,[7] (3) and more recently a subsequent analysis by Dreyer[8] of Oxford While in general these standards agree very well among one another, as is to be supposed, since they are all drawn from practically the same material, at times marked discrepancies are noted

Muscular activity, digestion, psychic excitement, and sleep profoundly affect the metabolism, but the modern definition of basal metabolism presupposes measurements during complete muscular repose and with the subject in the postabsorptive condition Yet, even under these conditions as the careful biometric analysis of the Nutrition Laboratory material shows,[7] basal metabolism is affected independently by weight, height, age and sex The prediction of the most probable basal metabolism of any given individual can, therefore, according to Harris and Benedict be made by the use of the two following planar equations

For men $h = +\ 66\ 4730 + 13\ 7516w + 5\ 0033s - 6\ 7550a$
For women $h = +\ 655\ 0955 + 9\ 5634w + 1\ 8496s - 4\ 6756a$

where h = total heat-production per twenty-four hours, w = weight in kilograms, s = stature in centimeters, and a = age in years To simplify the use of these equations, tables have been prepared, from which two sets of values can be drawn, added together, and the predicted metabolism obtained These tables, as well as all of the standards previously mentioned and other tables of data, together with illustrative computations, have recently been published by Dr Thorne M Carpenter of the Nutrition Laboratory[9]

VARIATIONS FROM THE STANDARD

Between the ages of 20 and 40 years within which age range most of the experimental data analyzed by Harris and Benedict were obtained, the error of prediction of the basal metabolism is the smallest Outside of this range, however, predictions can be made only with great care Finally, special attention should be called to the fact that the prediction of the basal metabolism of women cannot be made with anything like the accuracy obtainable with man and that even among so-called "normal" individuals, the measured basal metabolism frequently varies greatly from the standards For the present, persons who are "presumably in good health' are taken as "normal' individuals

There are a great many people who are fat, who have no demonstrable pathologic lesion There are seemingly a large number of individuals who are thin who come under the same head These are classified as people 'presumably in good health" Much more data on normals are imperatively needed

UNDERNUTRITION

To the factors known to influence basal metabolism, already mentioned, should be added the very important one of undernutrition By this is meant not simply starvation, but prolonged, persistent undernutrition, which results in perhaps even greater disturbances to

6 Aub J C and Du Bois E F Metabolism of Old Men Arch Int Med **19** 831 (May) 1917
7 Harris and Benedict Pub 279 Carnegie Inst Washington 1919
8 Dreyer Georges Lancet **2** 290 (Aug 7) 1920
9 Carpenter T M Pub 303 Carnegie Inst Washington 1921

metabolism than does a relatively short, complete withdrawal of food Since it is recognized that in many pathologic cases undernutrition is an ever present factor, it is readily seen how complicated the interpretation of metabolism data may become For example, are we to consider as normal or not the thin, emaciated, 16-year old girl who has a metabolism per square meter of body surface as high as that called for by the standard of Aub and Du Bois? The very fact that there is emaciation and undernutrition would speak for a low metabolism On the other hand, if the metabolism is found to be normal by this standard, should not one suspect the presence of some superimposed factor which more than offsets the depressing influence of the undernutrition?

CONCLUSIONS

Keeping these several factors in mind, we can see, therefore, that the use of a so-called "standard" or "normal" metabolism is fraught with considerable danger and that the interpretation of metabolism results is not a simple rule-of-thumb procedure In fact, the interpretation of results now far exceeds in complexity the actual laboratory technic The technical stumbling blocks to the advancement of metabolism studies in clinical medicine have, we believe, been overcome The great intellectual stumbling block, namely, lack of education with regard to the significance of metabolism measurements, cannot be overcome by the efforts of any one laboratory, one school, or one teacher Before using gaseous metabolism measurements, it behooves every physician to familiarize himself thoroughly with the fundamentals of gaseous metabolism and its significance May we not hope that medical schools in general will give this fact recognition and provide for it in their curriculums, thus furthering the admirable work instituted by Dr Eugene F Du Bois at the Cornell University Medical College

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FUNDAMENTAL IDEAS REGARDING BASAL METABOLISM *

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As early as 1839, Sarrus and Rameaux [1] stated that, since the loss of heat in animals must be proportional to their surface area, therefore the heat production must be proportional to the same unit

Regnault and Reiset,[2] ten years later, wrote

> The consumption of oxygen absorbed varies greatly in different animals per unit of body weight It is ten times greater in sparrows than in chickens Since the different species have the same body temperature, and the smaller animals present a relatively larger area to the environmental air, they experience a substantial cooling effect, and it becomes necessary that the sources of heat production operate more energetically and that respiration increase

Only three years after this, Bidder and Schmidt [3] made the following thoroughly modern statement

> The extent of the respiration, like every other component of the metabolism process, is to be regarded as a function of one variable, the food taken, and one constant, a distinctly typical metabolism (Respirationsgrosse) which varies with the age and sex of the individual This factor characterizes every animal of a given race, size, age and sex It is just as constant and characteristic as the anatomic structure and the corresponding mechanical arrangements of the body It is in the main determined by the heat consumption in the organism, that is to say the replacement quota for heat lost to the body through radiation and conduction to the environment in a given unit of time It may therefore be used to determine this, or in case the factor of heat loss is known one can deduce the extent of the metabolism
>
> This typical metabolism is that of the fasting animal It must be nearly the same in animals having the same body volume, surface and temperature, the larger the body surface, the body volume and temperature remaining constant, or the higher the body temperature with surface and volume constant, the higher will be the metabolism as determined by the laws of static heat
>
> Of course a sharp mathematical treatment of this phenomenon can be thought of only after very numerous and exact experimental determinations on animals of most varied form size and temperature

Rubner [4] first applied exact calculations to this problem, and he announced that dogs varying from 3 to 30 kg in weight produced the same number of calories per square meter of body surface, though per kilogram of body substance the heat production was 88 calories per kilogram in the smallest dog and only 36 calories per kilogram in the largest one He remarks

> Large and small dogs do not metabolize different quantities of food because their cells are differently organized but because cooling influences on the skin excite the cells to activity

Shortly after Rubner's publication, Richet, in 1885, showed that a cat, a rabbit and a goose, all of similar weights, produced approximately the same amounts of heat He stated that in future one should express all calorimetric observations in terms of surface area and not in weight, a principle now very largely followed in the United States

Rubner later came to a better understanding regarding the cause of the Law of Surface Area He found that two guinea-pigs of different sizes had the same heat production per square meter of surface, even though they lived surrounded by air at a temperature of 30, thus excluding all thermal influences He realized from this that the level of the basal metabolism could not be caused by the influence of cooling on the body, and no one has since thought so Rubner,[5] however, stated that he believed that the phenomenon observed was the result of accommodation to the action of cold to which animals in former ages had been exposed

My own work has shown that a cold sugar solution, introduced into the stomach of a dog, can induce an extra production of heat extending over several hours The body can therefore still respond to a withdrawal of heat by a compensatory production of it

Rubner calculated the surface area of animals by the formula of Meeh,[6] published in 1879 This formula assumed that the surface was a function of the $\frac{2}{3}$ power of the volume Since animals contain the same materials, weight may be substituted for volume The

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* Read before the joint meeting of the Section on Practice of Medicine the Section on Pharmacology and Therapeutics and the Section on Pathology and Physiology at the Seventy Second Annual Session of the American Medical Association Boston June 1921

1 Sarrus and Rameaux Bull Acad roy de med Paris **3** 1094 1839

2 Regnault and Reiset Annales de chimie et de physique Series 3 **26** 299 1849

3 Bidder and Schmidt Die Verdauungssafte und der Stoffwechsel Mitau and Leipzig 1852 p 348

4 Rubner M Ztschr f Biol **19** 549 1883

5 Rubner Die Gesetze des Energieverbrauchs bei der Ernahrung Leipzig and Vienna 1902 p 174

6 Meeh Ztschr f Biol **15** 425 1879

result thus obtained was multiplied by a constant k which expressed the relationship of weight in kilograms to surface in square meters for a given species For man, the formula of Meeh was $12.3\sqrt[3]{(\text{body weight})^2}$ It may be noted here that Dreyer, Ray and Walker [7] found that the surface area, blood volume and cross sections of the aorta and of the trachea are all proportional to the ⅔ power of the weight Dreyer later concluded that the vital capacity was a simple function of the body surface Moulton [8] found that the surface area was a two third power function of the total body nitrogen of beef cattle and, therefore, of the protoplasmic mass This confirms the conclusion of Carl Voit that the mass of the cells and their power to oxidize materials determines the height of the metabolism One should remember, however, in this relation the fact that in very corpulent people the heat production appears proportional to the surface area and not to the mass of protoplasm

Using Meeh's formula, McCrudden and I,[9] in 1912, found that the basal metabolism of a dwarf was 775 calories per square meter of surface and of two dogs 759 and 784 calories, respectively, results which agree within 3 per cent Comparing these with results obtained by Benedict on four men, it was found that they produced an average of 789 calories per square meter of surface It was also pointed out that an infant 5 months old, investigated by Howland, produced 1,100 calories per square meter of surface in twenty-four hours This accords with former observations made in 1899 by Magnus-Levy and Falk [10]

As early as 1895, Sonden and Tigerstedt [11] pointed out that the heat production of children during the period of adolescence was relatively higher per square meter of surface than in the adult This long-neglected scientific information was confirmed by the contributions of Murlin and of Du Bois, as well as by the extensive and valuable studies of Benedict and Talbot About this time it was found that the food prescribed by the commonly accepted dietary standards was insufficient for the nourishment of children in the regions of occupied Belgium and blockaded Germany

With the establishment of the calorimeter of the Russell Sage Institute of Pathology in Bellevue Hospital during the winter of 1912-1913, under the active control of Du Bois, it became absolutely necessary to seek for accurate standards with which to compare the heat production in hyperthyroidism, for example, with the heat which the patient would presumably have produced had he been perfectly well As there was a lack of accurate data, Gephart and Du Bois [12] investigated the heat production of several normal controls, and in their preliminary work established the value of 34 7 calories per square meter of body surface per hour as representing the basal metabolism of individuals of usual shape when the surface area was calculated by the Meeh formula Although criticism has been made that protoplasmic mass is the sole criterion of the intensity of metabolism, it appeared beyond the bounds of possibility to determine the protoplasmic mass in hyperthyroidism, whereas the Meeh formula furnished the most ready means then at hand of estimating the surface area Du Bois at that time came to the conclusion that, although Meeh's formula might not accurately measure the surface area at least the heat production was proportional to Meeh's formula

Finally, E F Du Bois actually measured the surface area of several individuals, and with his cousin, Delafield Du Bois,[13] worked out a formula from the measurements obtained He was thus able to calculate the true surface area within an average error of ± 1 5 per cent and a maximal variation of ± 5 per cent Meeh's formula proved to have an average inaccuracy of 16 per cent and a maximal variation of 36 per cent, the latter being found in the obese

The now generally used Du Bois height-weight formula for determining the surface area indicated that the measure of the basal metabolism was 40 calories per square meter per hour in men and 7 per cent less than this in women Du Bois claimed an accuracy of within ± 10 per cent, but of late others have ascribed even a greater degree of accuracy to his method His body surface formula shows that very obese women like the one described by Means as being a "veritable pork barrel,' conform to Rubner's law that the heat production of the basal metabolism is proportional to the surface area

Following Du Bois, Benedict and Harris published a book entitled "Biometric Study of the Basal Metabolism in Man," and gave various tables for the computation of the basal metabolism Using these tables for people of early adult life, the calculations by both methods yield essentially the same results The average basal metabolism of three old men, as determined by Benedict, was much lower than that found in six old men by Aub and Du Bois [14] and this tends to throw doubt upon the calculations of the true basal metabolism of old men It may, however be added that the basal metabolism of Zuntz remained at a constant level from the age of 41 to the age of 63

Dreyer [15] has objected to the introduction of the standing height as a factor in the calculation of the surface area on the ground that it is not a physiologic measurement, and he regards the sitting height as a more normal expression He has evolved a formula which is based on age and weight alone He states that this formula indicates that basal metabolism is not a simple function of body surface

However Dreyer calculates that the deviation between observation and calculation for Benedict's own series is, in the case of males, 5 27 per cent by his own formula, 5 33 per cent by Benedict's method and 5 65 per cent by Du Bois' method of calculation These differences, which amount to only 0 38 per cent at most do not appear to be so considerable as to manifest, for one formula over the others, a readily distinguishable refinement of procedure

Applying Dreyer's formula to the predictable metabolism of the six old men investigated by Du Bois and Aub the average deviation from the metabolism actually measured amounts to + 2 2 per cent, whereas Benedict's formula shows a discrepancy of + 19 7 per cent This, however, is a detail The main facts are established The controversy is concerning interpretations and theories

7 Dreyer Ray and Walker Proc Roy Soc Series B **86** 39 56 1912 1913
8 Moulton C R J Biol Chem **24** 299 (March) 1916
9 McCrudden and Lusk J Biol Chem **13** 450 1913
10 Magnus Levy Arch f Physiol, Supplement 1899 p 388
11 Sonden K and Tigerstedt R Skand Arch f Physiol **6** 1 1895
12 Gephart, F C and Du Bois E F The Determination of the Basal Metabolism of Normal Men and the Effect of Food Arch Int Med **15** 835 (May) 1915
13 Du Bois Delafield and Du Bois E F The Measurement of the Surface Area of Man Arch Int Med **15** 868 (May) 1915
14 Aub J C and Du Bois E F The Basal Metabolism of Old Men Arch Int Med **19** 823 (May) 1917
15 Dreyer G Lancet **2** 289 (Aug 7) 1920

In a recent publication Benedict [16] pens the following statement

As a result of the critique of the body surface law presented by Harris and Benedict, we believe that the accurate measurements of body surface made possible by Du Bois may *legitimately* be used in a manner heretofore never practicable in metabolism experiments, *provided* that they are considered as physical measurements and with no erroneous conceptions as to the existence of a causal relationship between surface area and heat elimination

I believe this statement to be somewhat exaggerated I believe that the Du Bois standards for basal metabolism can be relied on, and I also believe that, though one may doubt the causal relationship between surface area and heat elimination, such doubt will not invalidate the arithmetic employed in the calculation In making this statement I recall the words of Carl Voit, uttered regarding another matter

I maintain this as an incontestable fact It is of itself so important that I question whether it is desirable to add a word of explanation The results of a properly conducted and properly appreciated experiment can never be annulled, whereas a theory can change with the progress of science

The establishment of a predictable basal metabolism enabled those working with the Russell Sage calorimeter to interpret the variations from the normal in many diseased conditions and has offered a method now widely accepted throughout the world for a closer clinical diagnosis of several pathologic conditions

THE BASAL METABOLIC RATE IN HYPERTHYROIDISM *

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By the term hyperthyroidism is meant the clinical syndrome resulting from the presence in the body of an excess of thyroxin, which Kendall [1] has identified as the active principle of the thyroid gland and which, according to Plummer [2] "is a catalyst that accelerates the rate of formation of a quantum of potential energy in the cells of the organism" This syndrome is characterized by an increased basal metabolic rate and by intoxication clinically evidenced by nervousness, tremor, tachycardia, loss in strength and weight, and in the later stages myocardial disintegration

FACTORS INFLUENCING BASAL METABOLIC RATE

Plummer [2] has proved the calorogenetic action [3] of thyroxin by extensive basal metabolic rate studies, following its intravenous injection in myxedematous and normal persons, and also by partial removal of the thyroid gland from patients with hyperthyroidism

From the basal metabolic rate curves thus obtained it can be calculated that from 12 to 14 mg of active thyroxin must be present in the body to maintain the basal metabolic rate at the normal level, and that the rate of loss or destruction of the thyroxin is probably not far from 0 5 mg , daily The average calorogenetic action resulting from the intravenous injection of

TABLE 1 —INCREASE IN BASAL METABOLIC RATE FROM INTRAVENOUS INJECTION OF THYROXIN

Increase per mg	2 8	Increase per mg per sq m	4 7
Average variation	0 7 = 25%	Average variation	1 1 = 23%
Largest + variation	2 8 = 100%	Largest + variation	2 9 = 60%
Largest — variation	1 8 = 64%	Largest — variation	2 9 = 60%

Average B M R	Variation in Calorogenetic Action Depending on the Original Level of the B M R: Average Dose	Increase per Milligram	Average Dose per Sq M	Increase per Milligram per Sq M	Variation in Calorogenetic Action Depending on Size of Dose: Average Dose	Increase per Milligram	Average Dose per Sq M	Increase per Milligram per Sq M
Above to —14	8 7	3 3	5 7	5 0	4 8	3 5	3 6	5 0
—15 to —19	9 1	2 3	5 1	3 9	6 9	2 8	5 2	3 9
—20 to —24	7 3	2 9	4 6	4 6	8 8	2 9	7 0	5 7
—25 to —29	10 9	2 8	6 2	5 0	11 2	3 3	9 3	4 8
—30 to —34	14 8	2 9	9 2	4 9	16 0	2 6	11 5	2 7
—35 and below	15 5	3 0	8 6	5 1	24 0	1 6	13 2	3 0

different amounts of thyroxin in sixty-nine cases of myxedema or hypothyroidism of varying degrees of intensity is summarized in Table 1, and a characteristic curve is given in Chart 1, together with a curve illustrating the return to normal in the basal metabolic rate, following the removal of an adenoma from a patient having adenoma with hyperthyroidism Therefore, pathologic variations in the basal metabolic rate are due at least in disorders of the thyroid gland either to an increase or to a decrease in the normal

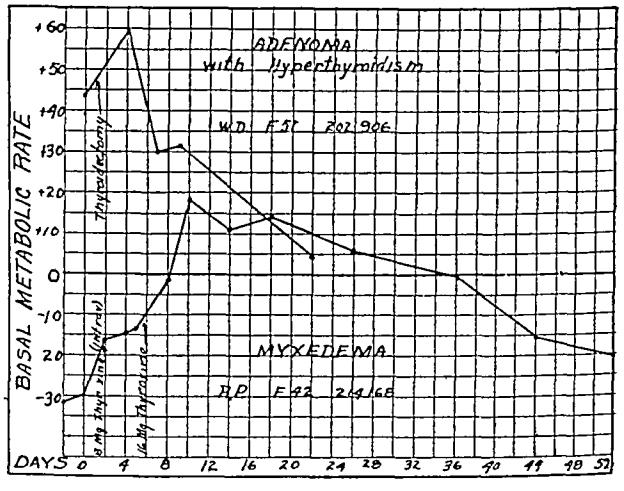

Chart 1 —On the upper curve the basal metabolic rates of a patient having adenoma with hyperthyroidism are plotted showing the original preoperative rate and the immediate postoperative rise in the metabolic rate followed by the drop to normal after partial thyroidectomy The lower curve illustrates the effect on the metabolic rate of a myxedematous patient of two intravenous injections of 8 and 16 mg of thyroxin from which can be calculated the amount of thyroxin needed to bring such a patient to a normal metabolic rate and therefore the presumable amount of thyroxin in the body and also the rate at which the thyroxin is destroyed or eliminated

quantity of thyroxin in the body, thus explaining the characteristic and fundamental alterations in the basal metabolic rate found in hyperthyroidism and in hypothyroidism

16 Benedict and Talbot Metabolism and Growth from Birth to Puberty Pub 302 Carnegie Institution of Washington 1921 p 159

*Read before the joint meeting of the Section on Practice of Medicine the Section on Pharmacology and Therapeutics and the Section on Pathology and Physiology at the Seventy Second Annual Session of the American Medical Association Boston June 1921

1 Kendall E C Isolation of the Iodine Compound Which Occurs in the Thyroid J Biol Chem **39** 125 146 (Aug) 1919

2 Plummer H S and Boothby W M Specific Dynamic Action of Thyroxin Am J Physiol **55** 295 296 1921

3 Dr Graham Lusk has requested that the term 'specific dynamic action previously used by Plummer and Boothby to indicate the calorific or heat producing power of thyroxin and epinephrin be reserved to express the increase in heat production following the ingestion of a food stuff maintaining the sense of the term as originated by Rubner The term calorogenetic action has been suggested by Dr Lusk after consultation with Dr Francis G Benedict to signify the specific stimulus to metabolism given by such substances as *thyroxin and epinephrin*

However, other factors than the quantity of thyroxin in the tissues may exist which play a part in the maintenance of the normal basal metabolic rate and influence its abnormal fluctuations, especially of a temporary nature. Removal of the suprarenals has been shown by Aub[4] to cause a decrease in the basal metabolic rate, which may be brought back to normal by the slow intravenous injection of suprarenal extract, at the rate stated by Stewart and Rogoff to be the normal output in the body. Conversely, Boothby and Sandiford[5] have shown that epinephrin possesses a calorogenetic action in man when injected subcutaneously (0.5 c.c. of 1:1,000). However, the evidence is not yet conclusive that the suprarenal glands are concerned with the normal rate of resting cellular combustion, or that they are the primary cause of abnormal rates of any definite clinical syndrome, notwithstanding the fact that decreased rates have been reported in Addison's disease and following experimental suprarenalectomy.

TABLE 2.—STATISTICAL STUDY OF 1,636 CASES OF GOITER.*

	Adenoma		Exophthalmic Goiter		
			Two Ligations, Rest and Thyroidectomy	One Ligation Thyroidectomy	Thyroidectomy
	Non-Toxic	Toxic			
Number of cases studied	274	366	341	275	420
Age	44	48	37	38	36
Duration goiter, years	15	18.0	3.4	3.9	5.0
Age at onset of goiter	28	30	34	34	31
Duration symptoms, years		1.8†	1.6	1.5	1.3
Age at onset of symptoms		46	35	37	35
Cardiac decompensation					
Positive	13%	46%	54%	48%	44%
Probable	5%	10%	9%	5%	7%
Exophthalmos	2%	3%‡	67%	65%	51%
Thrills	4%	5%	63%	58%	39%
Fruit	12%	12%	87%	86%	67%
Weight pathologic specimen, gm.	187	152	59	55	51
Glycosuria	1%	2%	1.4%	1%	1%
Blood pressure					
Systolic (floor) §	141	158	150	146	141
Diastolic (floor)	80	86	76	74	77
Pulse pressure (floor)	56	72	75	72	64
Pulse rate (floor)	91	107	125	121	113
Basal metabolic rate	+20%	+30%	+63%	+53%	+33%
Clinical diagnosis correct**	98%	88%	99%	98%	97%

* Differential diagnosis of adenoma without hyperthyroidism (nontoxic adenoma), adenoma with hyperthyroidism (toxic adenoma) and exophthalmic goiter. The cases of exophthalmic goiter are divided into three groups depending on the surgical treatment: (1) two ligations, two to three months' rest at home and thyroidectomy, (2) one superior pole ligation followed by thyroidectomy and (3) primary thyroidectomy.

† 1.8 represents the average duration since the onset of definite symptoms; however, it is possible to elicit a history of possible duration of 3.2 years and in this respect differs from exophthalmic goiter which has a much clearer cut onset.

‡ The exophthalmos was only slight in these cases, never more than degree 1 on a scale of 4 and corresponds to that so frequently seen in certain types of nephritis.

§ The blood pressures and pulse rate were those obtained at the time of the clinical examination with the patient sitting.

** Accepting the report of the Section on Surgical Pathology made by fresh frozen section examination at the time of operation as correct, the previous clinical diagnosis was found to correspond as indicated. The close agreement between the pathologist's diagnosis of adenoma on the one hand and diffuse parenchymatous hypertrophy (exophthalmic goiter) on the other hand and the respective clinical diagnoses is very striking; the pathologist, however, cannot distinguish adenomas that produce hyperthyroidism from those that do not.

The possible increased basal metabolic rate in active acromegaly, and the decreased rate in the syndrome known as hypopituitarism, suggest that alterations in the activity of the pituitary gland may change the metabolic level. There is, however, as yet little evidence that the secretion of any part of the pituitary gland is concerned with the normal rate of cellular combustion in the sense that it acts as a calorogenetic agent. There are certain other diseases in which very occasionally an increased basal metabolic rate has been found, the cause of the increased heat production in these instances is not known.

TABLE 3.—DURATION OF GOITER IN ADENOMA WITH AND WITHOUT HYPERTHYROIDISM AND IN EXOPHTHALMIC GOITER (1,636 CASES).

Duration, Years	Exophthalmic Goiter, per Cent	Adenoma: With Hyperthyroidism, per Cent	Adenoma: Without Hyperthyroidism, per Cent
From 0 to 0.9	42		
From 1 to 1.9	15		
From 2 to 2.9	9	17	10
From 3 to 3.9	6		
From 4 to 4.9	3		
From 5 to 9.9	11	14	18
From 10 to 14.9	4	13	17
From 15 to 19.9	4	13	18
20+	5	43	37
Average duration, years	4.2	18	15.7

At this meeting Du Bois has shown that the increase in the basal metabolic rate accompanying febrile diseases follows Van't Hoff's law of the velocity of chemical reactions with temperature changes, it is about doubled for an increase of 10 degrees C.

A decrease in the basal metabolic rate is characteristic of myxedema and is due to the inability of the thyroid gland to supply a sufficient amount of thyroxin. A lowered basal metabolic rate has been consistently found in experiments in prolonged fasting, and in clinical conditions of inanition in which the food supply is decreased over a long period (stricture of the esophagus, cardiospasm, anorexia nervosa, etc.); the mechanism producing this decreased rate is not known, yet it seems quite probable that it may be a compensatory slowing down of the life processes in an endeavor on the part of the organism to prolong life on a minimum utilization of its stored food, and that the thyroid gland itself takes part in this decreased compensatory process, with a consequent reduction in the amount of thyroxin acting as a catalyst.

TABLE 4.—AGE AND OCCURRENCE OF ADENOMA WITH AND WITHOUT HYPERTHYROIDISM AND EXOPHTHALMIC GOITER.

	Percentage of Patients by Decades Having Hyperthyroidism Caused by (1) Adenoma or (2) Exophthalmic Goiter			Percentage of Cases in Each Decade of (1) Adenoma Without Hyperthyroidism (2) Adenoma With Hyperthyroidism (3) Exophthalmic Goiter		
	Number of Cases	Adenoma, Toxic	Exophthalmic Goiter	Adenoma, Nontoxic	Adenoma, Toxic	Exophthalmic Goiter
Age						
From 0 to 9	1	0%	100%	0%	0%	1%
From 10 to 19	59	8%	9%	1.5%	1%	5%
From 20 to 29	289	10%	90%	8%	8%	24%
From 30 to 39	374	13%	87%	24%	13%	31%
Below 40	714			33%	22%	61%
From 40 to 49	398	30%	70%	33%	29%	24%
From 50 to 59	253	46%	54%	27%	32%	13%
From 60 to 69	75	77%	23%	6%	16%	2%
From 70 to 79	2	100%	0%	0.5%	1%	0%
Above 40	688			67%	78%	39%
No. cases	1,402	366	1,036	244	366	1,036
Average age		48	37	44	48	37

UNSTABLE FOUNDATION OF ENDOCRINOLOGY

While we recognize that there is a biologic interdependence not only of every organ but of every cell in

4 Aub, J. C., Forman, J., and Bright, E. M.: The Effect of Adrenalectomy Upon the Total Metabolism of the Cat, Am. J. Physiol. 55: 293, 1921.

5 Boothby, W. M., and Sandiford, Irene: The Relationship of the Increase in Blood Sugar Concentration to the Specific Dynamic Action of Glucose and to the Specific Dynamic Action of Adrenaline, Am. J. Physiol. 55: 293-294, 1921.

the body, nevertheless we are able to measure quantitatively only the calorogenetic power of the active principle of the thyroid gland, consequently we deprecate the tendency so much in evidence in current literature to parcel out to each ductless gland a certain definite yet entirely hypothetic power, and to build on such an unstable foundation the mammoth superstructure expressed in the term endocrinology

ADENOMA WITH HYPERTHYROIDISM

Plummer [2] has shown that pure hyperthyroidism can be produced in a person by the administration of an excess of thyroxin, and that the syndrome thus produced cannot be distinguished from that caused by an overactive adenoma of the thyroid gland In each case, either the discontinuance of the thyroxin or the operative removal of the adenoma ends the syndrome, and the patient rapidly returns to a normal condition, with a normal basal metabolic rate (Table 5) The characteristic symptoms of adenoma with hyperthyroidism are those that can be predicted from a knowledge of physiologic effects produced by a prolonged increase in the rate of cellular combustion, consequently, for many years Plummer [6] has spoken of the overfunctioning adenoma of the thyroid as "adenoma with hyperthyroidism" and has recognized the disease as a clinical entity with a characteristic course and symptoms In this condition, the thyroid gland presents, on pathologic examination, discrete, single or multiple nodular adenomatous tumors in various stages of degeneration, surrounded by a definite capsule

TABLE 5.—EFFECT OF OPERATIVE TREATMENT ON 284 CASES OF EXOPHTHALMIC GOITER AND ADENOMA

	Exophthalmic Goiter								Adenoma			
	Two Ligations at Home and Thyroidectomy			One Ligation and Thyroidectomy			Primary Thyroidectomy		With Hyperthyroidism		Without Hyperthyroidism	
	Before Treatment	Ten Days After Second Ligation	After Two Months Rest	Before Treatment	Ten Days After First Ligation	After Thyroidectomy	Before Treatment	After Thyroidectomy	Before Treatment	After Thyroidectomy	Before Treatment	After Thyroidectomy
B M R	+68%	+51%	+43%	+60%	+39%	+17%	+36%	+8%	+38%	+6%	−3%	−9%
Systolic blood pressure	139	132	131	137	126	119	133	122	145	133	110	115
Diastolic blood pressure	75	72	72	71	66	71	73	73	81	78	74	70
Pulse pressure	64	60	59	66	60	48	60	49	64	55	41	45
Pulse rate	122	114	108	116	106	92	107	86	102	79	74	3
Weight	52 3	48 0	46 6	52 8	49 7	50 7	53 3	52 9				
No cases in each group	55			42			72		92		93	

EXOPHTHALMIC GOITER

Until recently, adenoma with hyperthyroidism has been confused with exophthalmic goiter, which is another pathologic condition of the thyroid gland, consisting of diffuse parenchymatous hypertrophy symmetrically involving the entire gland Clinically, exophthalmic goiter, like adenoma with hyperthyroidism is characterized by an increased basal metabolic rate and, therefore, both diseases have in common the symptoms due to the increased rate However, exophthalmic goiter has a different clinical course from adenoma with hyperthyroidism, and in addition, certain peculiar and characteristic symptoms, one or more of which are present in varying degrees, such as exophthalmos, thrills and bruit, tendency to gastrointestinal crises, and a peculiar type of nervousness That we are dealing with two entirely distinct diseases in exophthalmic goiter and in adenoma with hyperthyroidism has been proved beyond reasonable doubt by Plummer,[7] by the difference in the mode of onset of the two diseases, the clinical course and duration of the symptoms, the physical findings, and, finally, the difference in the pathology of the thyroid gland The differential points in the two diseases are strikingly shown in Tables 2, 3 and 4 To account for these differences, the most probable hypothesis is that in exophthalmic goiter, not only are the thyroid cells producing an excess of thyroid hormone, but also the secretion so formed has some abnormal and peculiar chemical properties that produce the symptoms that differentiate it from pure hyperthyroidism Kendall [1] has suggested that probably there is, in exophthalmic goiter, a slight alteration in the structure of the thyroxin molecule

The delay in the recognition of adenoma with hyperthyroidism as a disease distinct from exophthalmic goiter has been due in part to the fact that it was not at first recognized that small isolated areas of hypertrophic cells, such as may be found in some adenomatous thyroids, do not produce the clinical syndrome of exophthalmic goiter and conversely, that diffuse parenchymatous hyperthrophy may develop in a gland in which adenomatous tumors are incidentally present

OPERATIVE PROCEDURE IN THE TWO DISEASES

Aside from the academic interest in differentiating adenoma with hyperthyroidism and exophthalmic goiter, the correct diagnosis is of great clinical importance because the times of onset, duration, course and outcome are different, furthermore, the operative program is not the same in these two diseases In adenoma with hyperthyroidism, the operation is directed to the removal of the tumor, while in exophthalmic goiter the surgical procedures are planned to reduce, in the severer cases, the overactivity of the diffuse parenchymatous hypertrophied thyroid by successive steps first, not water injection, second, one or more ligations, and, finally, one or more partial thyroidectomies In adenoma with hyperthyroidism, preliminary ligation of the blood vessels is seldom of benefit even in the severe cases, while in exophthalmic goiter the benefit from ligation is usually quite marked Simple enucleation of the adenoma is almost invariably sufficient to cure the patient suffering from adenoma with hyperthyroidism, on the other hand, extensive resection of the greater part of both lobes and the isthmus is necessary to reduce the activity of the hypertrophic parenchymatous thyroid of exophthalmic goiter within normal limits, and not infrequently a second and

6 Plummer H S The Clinical and Pathologic Relationship of Hyperplastic and Nonhyperplastic Goiter J A M A 61 650 651 (Aug 30) 1913

7 Plummer H S The Clinical and Pathologic Relationship of Simple and Exophthalmic Goiter Am J M Sc 146 790 796 1913

occasionally a third resection are necessary before the intensity of the intoxication is brought within the bounds of safety The effect of operative treatment is illustrated in Table 5

It is well known that the course of exophthalmic goiter proceeds in cycles of intensity with intervening periods of partial and occasionally total remission Experience has shown that the dangers of any operative interference during the rising curve of intensity and at the peak, especially if associated with gastrointestinal crises and loss of weight, are greater than during the stage of improvement The curve of the basal metabolic rate in conjunction with the loss or gain in body weight of the patient are valuable mathematical expressions of the intensity and phase of the intoxication cycle We have been unable to prove that the roentgen ray definitely influences the natural course of exophthalmic goiter

DIAGNOSTIC VALUE OF BASAL METABOLIC RATE

Accepting the definition of hyperthyroidism as a clinical syndrome resulting from the presence in the body of an excess of thyroxin which increases the rate of heat formation, and the conception that the basal metabolic rate serves as a fundamental classification of disease,[8] it is obvious that a very sharp distinction can be drawn between mild cases of exophthalmic goiter, and those conditions known as "effort syndrome," "disorderd action of the heart," "cardiac neurosis," "nervous instability," "neurocirculatory asthenia" or "neurasthenia," which on superficial examination present some of the signs and symptoms of mild exophthalmic goiter, but in which the basal metabolic rate is normal, and which on close analysis can be shown not to be dependent on an excess in the body of the thyroid hormone The basal metabolic rate is of particular diagnostic value in these cases when they are accompanied, apparently without causal relationship, by a colloid enlargement of the thyroid gland, as so often occurs in the regions of the endemic goiter

VALUE OF VARIOUS TESTS

Confusion in the differential diagnosis of functional neurasthenia from mild exophthalmic goiter and adenoma with hyperthyroidism has been increased during the last few years by the revival of the epinephrin hypersensitive test in a new guise by Goetsch[9] A series of studies by Peabody[10] and his associates, and similar studies from our laboratory,[11] have shown that there is no correlation between the intensity of the epinephrin reaction and the degree of hyperthyroidism as controlled by simultaneous studies of the basal metabolic rate, also, that the so called "positive" epinephrin reaction is present in a large percentage of cases that are not hyperthyroid, and even occasionally in patients with myxedema Studies on the action of epinephrin by Boothby and Sandiford[12] show that there is not sufficient physiologic basis for the assumption that the reaction to the subcutaneous injection of an active principle of the suprarenal gland is indicative in clinical medicine of activity of the thyroid gland The blood sugar curves as shown in Chart 2, following the ingestion of 100 gm of glucose, have not been sufficiently consistent in the different types of cases studied by us to be of diagnostic value in spite of the fact that high and prolonged curves were more frequently found in patients with hyperthyroidism than in those with hypothyroidism

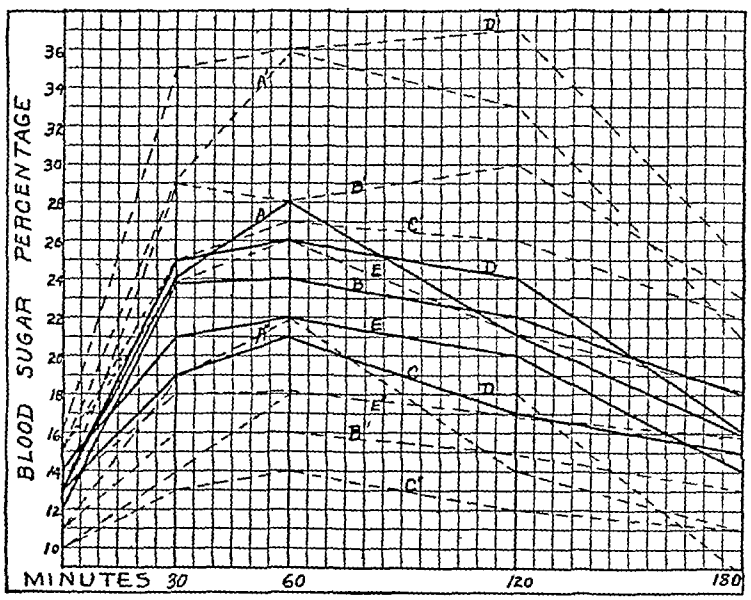

Chart 2.—The heavy black lines represent the average blood sugar curves following the ingestion of 100 gm of glucose in patients having various basal metabolic rates the dotted lines represent the upper and lower limits of each group *A A* and *A″* average upper and lower limits for seven cases with basal metabolic rates between + 4 and + 59 per cent *B B* and *B″* six cases between + 11 and + 39 per cent *C C* and *C″* ten cases between — 40 and — 11 per cent *D D* and *D* sixteen cases above + 60 per cent *E E* and *E* four cases between — 10 and + 10 per cent

CONCLUSIONS

The basal metabolic rate which is a determination of the heat production in a person under standard conditions, serves as a measurement of the most fundamental process of life itself Variations of the heat production, and alterations in the body temperature are to be considered rightly a means of fundamental disease classification, and the basal metabolic rate serves as an accurate diagnostic aid in the recognition of the presence or absence of hyperthyroidism

8 Boothby W M The Fundamental Classification of Disease by the Basal Metabolic Rate J A. M A **76** 84 (Jan 8) 1921

9 Goetsch F Studies on Disorders of the Thyroid Gland Hyper sensitiveness Test with Especial Reference to Diffuse Adenomatosis of the Thyroid Gland Endocrinology **1** 389 402 (July Sept) 1920

10 Peabody F W Sturgis C C Tompkins, E H and Wearn J T Epinephrin Hypersensitiveness and Its Relation to Hyperthyroidism Am J M Sc **161** 508 517, 1921

11 Boothby W M Adenoma of the Thyroid with Hyperthyroidism (Thyrotoxic Adenoma) History of the Recognition of This Disease as a Clinical Entity A Study of the Symptomatology with Basal Metabolic Rate Endocrinology **5** 1 20 (Jan) 1921

12 Boothby W M and Sandiford Irene The Effect of the Subcutaneous Injection of Adrenalin Chlorid on the Heat Production Blood Pressure and Pulse Rate in Man Am J Physiol **51** 200 201 1920

Success in Health Work—The master key to the door of success in the public health business is *work* The health officer who consistently works hard will often succeed in much higher degree than the health officer of greater attainments who does not work so hard Do not be discouraged if your efforts do not result in the establishment of perfect conditions Get the best results you can and strive for more and better Be practical, use common sense—L L Lumsden, "Rural Hygiene," *Public Health Rep* Nov 7, 1919

THE OMISSION OF DRAINAGE FOLLOWING CHOLECYSTECTOMY *

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In proposing, as a routine procedure, the omission of peritoneal drainage following uncomplicated cholecystectomy, a deviation from the standardized technic that the majority of surgeons are as yet unprepared to accept as safe, I wish to make no pretense at the introduction of a new or original idea Rather is the chief purpose of this paper to point out that the peritoneal toilet commonly used at the conclusion of the operation is not altogether abreast that used elsewhere in the abdomen

In reviewing the literature, one is impressed by the fact that fifteen or twenty years ago there were numerous contributions by well known men advocating the procedure Witzel [1] in 1905 reported a series of 500 cases, in which he closed the peritoneum, with one death, the cause of which was not given Witzel, unlike many of the men in the earlier days of gallbladder surgery, who made a tight closure, was fully cognizant of the dangers, the chief of which he considered postoperative biliary leakage To prevent this accident, by means of "the finest Lembert suture," the stump of the cystic duct was whipped over and over, pulling the stump in toward the common duct The raw surface of the liver and the stump were then peritonealized "As in ovariotomy, then in appendectomy, and then in cholecystectomy, the technic of the care of the stump is so developed that its burial beneath a smooth peritoneal surface can be followed"

In 1904, Mayo Robson,[2] in his monograph "Diseases of the Gallbladder and Ducts," remarked "Unless there be oozing, or unless the wound has been infected by pus or gallbladder secretion, drainage may perhaps be thought unnecessary" Robson was unwilling unreservedly to recommend the method Similarly Moynihan,[3] in his work "Gallstones and Their Treatment," published in 1905, states, "If inflammatory changes are limited to the gallbladder, drainage need not be provided, the whole abdominal wall being soundly closed" In one of his later works,[4] however, while expressing the same opinion concerning drainage, or rather its omisssion, he describes his routine practice of placing a rubber tube in contact with the stump of the cystic duct

Goldmann,[5] in 1912, in an article based on the work of Rotter's clinic, not only unreservedly advocated closure in the "simple cases," but denounced the indiscriminate use of peritoneal drainage when it did more harm than good Goldmann reported ninety-five cholecystectomies closed without peritoneal drainage, with one death The cause of this death was wound erysipelas, necropsy eliminated the possibility of abdominal accident In this series were three acute cases in each of which there was a gangrenous patch on the free border of the gallbladder, in two cases, there was perforation of the free surface He recommended closure in empyema and called attention to the inefficacy of drainage in a diffuse spreading reaction In one of the earlier cases, there occurred an abscess due, as he states, to the fact that he "had not learned his indications" Like Witzel, Rotter considered a special technic in handling the stump of the cystic duct necessary to avoid its reopening This consisted of two ligatures, one just above the common duct, and one at the point of severance of the gallbladder The doubly ligated duct was then kinked on itself, the distal ligature being used to maintain the kinked position by tying the end of the duct to its base The stump was then buried retroperitoneally When such peritonealization was not possible, drainage was considered necessary "The rapid convalescence was a joy to watch"

Rotter,[6] defending his position against the adverse criticism of Kehr, drew the analogy of the inverted stump of the appendix, and quoted the experiences of Riedel, Witzel, Hoffmeister and others Riedel considered "tamponade" not only useless, but harmful

This unreserved stand in favor of the omission of drainage has not had so prominent a place in our own literature until quite recently, and then by only two men Richter and Willis While there seems to be a growing tendency in this direction, the rubber tube or cigaret drain, placed in close proximity to the stump of the cystic duct, still finds the greatest favor, the assumption being that although the need for drainage is infrequent, either of these two drains serves to prevent accidental leakage of bile into the peritoneum

In 1917, Willis [7] reported thirty-eight cases in which he closed the peritoneum Willis began omitting drainage because of the infrequency with which postoperative biliary leakage occurred when drains were inserted, and so he came to the conclusion that cases that were benefited by drainage were extremely rare "A shortened and more comfortable convalescence, and a larger proportion of patients obtaining more permanent relief" were his observations on his cases In some subsequent experimental work, Willis [8] called attention to the extensive crippling adhesions produced by bile in the peritoneum, and suggested that in the doubtful cases cholecystectomy without preliminary exploration of the gallbladder be performed, avoiding both the biliary soiling and the necessity for drainage When he has spilled bile, he merely flushes the peritoneum with salt solution and then aspirates the fluid with an electric aspirator

Bottomley,[9] in a recent communication, called attention to the desirability of dispensing with drainage in a large number of cholecystectomies, and of providing others with drainage for a shorter time, from twenty-four to thirty-six hours Oozing and contamination of the field with the contents of an infected gallbladder are taken as indications for drainage for a short time

C H Mayo [10] recently stated, "More and more I am closing the abdomen without drainage, in only a few instances satisfying my old inclination to drain by leaving the double strand of catgut attached to the liver

* Read before the Section on Surgery General and Abdominal at the Seventy Second Annual Session of the American Medical Association Boston June 1921

1 Witzel O Zur Gallenblasen Extirpation Zentralbl f Chir **33** 865 1906

2 Mayo Robson J W Diseases of the Gallbladder and Bile Ducts Ed 3 New York William Wood & Co 1904

3 Moynihan Berkeley Gallstones and Their Surgical Treatment Ed 2 Philadelphia W B Saunders Company 1905

4 Moynihan Berkeley Abdominal Operations 1916

5 Goldmann A Ueber den Verschluss der Bauchhole nach der einfachen Cholecystectomie Berl klin Wchnschr **49** 1649 1912

6 Rotter J Bemerkungen zu der Kritik welche Herr Kehr and der Methode des primaren Verschluss der Bauchhole bei einfacher Cholecystectomie geübt hat Berl klin Wchnschr **49** 1651 1912

7 Willis A M Cholecystectomy without Drainage J A M A **69** 1943 (Dec 8) 1917

8 Willis, A M The Advantage of Cholecystectomy in the Avoidance of Adhesions in Gallbladder Surgery Ann Surg **66** 411 (Oct) 1917

9 Bottomley J T The Question of Drainage in Cholecystectomy Boston M & S J **183** 232 (Aug 19) 1920

10 Mayo C H Cholecystectomy with Modified Drainage Minnesota Med **4** 1 (Jan) 1921

where the fundus was separated from it and continued in a suture down to the cystic duct This catgut is brought out of the abdomen, but the abdomen (peritoneum, muscle, fascia, skin) is closed tightly around it" In this connection, a modified type of drainge suggested by Doyen [11] is interesting Doyen suggested that the peritoneal sheath of the gallbladder be sutured to the abdominal wall, a marsupialization, thus making the entire operative field extraperitoneal A glass tube is left in the abdominal wall down to the sheath

My own experience with the method dates back to the technic H M Richter instituted in his clinic in Wesley Memorial Hospital in 1916 In his clinic during the last seven or eight years, he (Richter) has laid special emphasis on the harm done by unnecessary drainage of the peritoneum particularly in perforated duodenal ulcer [12] and following cholecystectomy [13]

In 1916, following the removal of a gallbladder for stones, Richter phenolized the cystic duct stump, much in the fashion that we formerly treated the stump of the appendix This patient and the patients in several subsequent cases so treated made uneventful recoveries Then believing that the phenol was unnecessary, we iodized the stump in a few cases only later to abandon the use of any antiseptic on the stump as needless

NECESSITY FOR PRECAUTION

It is recognized, however, that certain dangers other than operative accidents complicate the operation of cholecystectomy Therefore, in proposing a method, the very application of which may, on theoretical grounds, appear to court the gravest of these dangers, the surgeon must proceed along fundamentally well grounded lines

First, it may be said that the peritoneum may be exposed to the possibility of infection from the stump of the cystic duct, or occasionally from the gallbladder, in which a preliminary exploratory incision has been made Second, there may be postoperative biliary leakage from the stump of the cystic duct Third, there may be a dangerous amount of bleeding from the raw surface of the liver Fourth, there may be biliary leakage from the gallbladder bed In view of these possibilities, therefore, most men institute peritoneal drainage as a routine procedure, the type and amount of drainage varying with the individual operator, some using a gauze tampon, others using a small rubber tube or cigaret drain It is a common practice to secure the drain in such a way as to hold it in close contact with the stump of the cystic duct

In the usual cholecystectomy in which the gallbladder is unopened, peritoneal soiling is certainly very slight, and I believe that the majority of surgeons would be more inclined to remove a doubtful organ than make an exploratory incision as a preliminary to removal But even in such an event, the peritoneum can adequately be protected by packs The infection of the usual chronically infected gallbladder in which cholecystectomy is indicated is of a low grade Diffuse peritonitis from such a source need not be feared We do not regard the spilling of bile during the course of the operation as an indication to drain Furthermore, Richter has, on several occasions, spilled bile and pus, and then tightly closed the peritoneum without untoward results, feeling that it is the continuous reinfection rather than a single soiling that is dangerous The mucous membrane of the duct in the chronic cases is likewise benign from a bacteriologic standpoint Bacteriologic smears made from the stump of the cystic duct show an average of an occasional organism or two per field The actual amount of the mucous membrane that is exposed is very small, and surely much less than that of a ligated appendiceal stump which we know may be left uninvaginated in the peritoneal cavity with impunity

The postoperative escape of a quantity of infected bile within the peritoneum might easily result fatally It occasionally happens following gallbladder removal when drainage has been used, that there is a variable amount of biliary leakage along the drain, and it has frequently been pointed out that such leakage may first make its appearance several days after operation The fact that such leakage may only occasionally occur has been used as an argument against the routine omission of drainage, even in the simple cases, a most valid argument if the same tendency to leakage is present when the drain is omitted

It seems most probable, too, that postoperative biliary leakage in these cases must be due to the contact between the drain and the stump of the cystic duct It is a common practice to use the ligature with which the duct has been ligated, as a means of holding the end of the drain in close contact with the stump of the duct The infection introduced by the drain is most likely responsible for the failure of the cut surface to heal The analogy may be found in a suture line in the bowel which may be endangered by the close contact of the drain I have called attention to the fact that numerous men have suggested various types of special attention to the stump of the duct to prevent its reopening, such as double ligating, or double ligating and angulating the duct sharply on itself and also burial of the stump behind the peritoneum

TECHNIC

In the technic suggested by Richter, a very fine catgut is used, a No 1, or, if the No 0 has sufficient strength to prevent its breaking we prefer that The pressure in the common duct amounts to from 200 to 500 mm of water, very much less than the blood pressure of the average individual There is no need, therefore, in order to insure permanent closure of the duct to use a ligature heavier than that which would be more than ample for the carotid or the femoral artery Extra heavy catgut kangaroo tendon, or heavy nonabsorbable material, such as braided silk or linen, carries with it the objections that characterize the use of foreign material in an infected field We use a single ligature which, tied with sufficient force to obliterate the lumen, probably does not function more than a few hours As yet we have not had to reopen an abdomen for an accumulation of bile The peritoneal coat is then enabled to seal the duct

We do not "peritonealize,' a phrase of technic given a prominent place in the literature of the subject This peritonealization consists essentially in suturing the serous flaps over the gallbladder bed and in placing the stump of the cystic duct behind the peritoneum In a recent contribution, Richter,[14] reviewing the work of Willis referred to this peritonealization recommended by Willis as constituting a "peculiar basic error" Basing his practice on the well known capacity of the

11 Doyen E L Surgical Therapeutics and Operative Technique. New York William Wood & Co 1918
12 Richter H M Perforated and Duodenal Ulcers Surg, Gynec & Ob 28 399 (April) 1919
13 Richter H M Surg Gynec & Obst 29 455 (Nov) 1919
14 Richter H M Surgery of the Gall Tracts Without External Drainage Illinois M J 39 256 (May) 1921

peritoneum for limiting the spread of infection, he (Richter) has felt that the stump can, with far greater safety, be trusted to the peritoneum than to the retroperitoneal tissues where infection usually tends to spread to the proportions of a cellulitis That the stump can with impunity be so treated, only the more surely proves how nearly free from organisms the mucosa must be, and how little must be the tendency to reopen It seems to me that nothing more clearly emphasizes this point than the fact that the greatest factor of success in intestinal surgery is the peritoneum

Persistent bleeding from the gallbladder bed is of rare occurrence except in jaundiced patients In the removal of the gallbladder, we begin at the fundus, incising the peritoneal reflection and freeing the gallbladder from the liver by gentle blunt dissection with the finger A pack is held by an assistant against the raw surface as the gallbladder is stripped away, and usually by the time the artery and duct have been ligated and cut, the oozing has stopped I believe that spending an extra few minutes for the purpose of so controlling hemorrhage is time well spent if it will avoid the necessity of leaving a pack in the peritoneum When, however, such bleeding is excessive, or when it fails to subside within a reasonable length of time, it demands the factor of safety offered by a gauze pack

Leakage of bile from the raw surface of the liver is not common It has not been necessary in our experience to drain because of such occurrence Following the method of hemostasis suggested, the raw surface is absolutely dry We do not attempt to do anything with the raw surface of the liver

EXPERIMENTAL STUDIES

With the purpose of studying the effect of drainage in experimental animals, during the last few months, I have performed forty cholecystectomies on dogs, in each case removing a normal gallbladder In the first twenty-five dogs, following the typical operation, the stump of the cystic duct was ligated with a No 1 catgut The ligature, left sufficiently long, in each case was used to keep the drain in contact with the stump of the cystic duct by means of a suture In the first eight, cigaret drains were used, in twelve, rubber tubing having an outside diameter of one-fourth inch or a little more, was used In five, a strip of dry gauze was inserted with the tube down to the stump of the duct In the series, one dog died immediately after operation, a second died of peritonitis and a third tore open his wound and had to be killed There were several other wound infections

The animals were carefully watched for [illegible] or more for evidence of postoperative bile [illegible] To supplement inspection, the drains were [illegible] after four to six days and tested chemically None was found

In a second series, ten dogs were [illegible] rubber tubing after the duct had been [illegible] heavy linen or silk My purpose here was to determine whether nonabsorbable material was [illegible] frequently followed by leakage than catgut In [illegible] animals, a tight closure was made In the second series was there leakage

A characteristic feature at necropsy was [illegible] extensive adhesions in the upper abdomen, [illegible] fact that a relatively small incision with the minimum of peritoneal trauma was [illegible] of course, our clinical experience with secondary operations on the gall tracts verifies The five controlled animals showed adhesions also, but they were fewer in number and not so heavy

It may be argued here that the analogy with the human in whom cholecystitis is present is not exact, because of the absence of infection, but observation of the drain tract after removal of the drain makes me believe that the conditions about the stump of the duct are essentially the same Positive deductions cannot, of course, be made from such a small series of experiments, yet, I believe that a ligated cystic duct within the peritoneum is almost absolutely safe I had expected to produce occasional leakage, at least, in this work Failing to do so, I am led to the conclusion that even under such unfavorable conditions as those introduced by the drain, namely, large foreign body and infection, the duct normally tends to heal

It is necessary, of course, to remark that indications and contraindications for omitting peritoneal drainage must ever be present in the mind of the operator When a cholecystectomy is complicated by other operative work on the gall tracts, for jaundice or cholangeitis, conditions for omitting drainage would not be considered favorable, although we know that the drain functions but little, as far as the peritoneum is concerned The necessity for biliary drainage carries with it the necessity for peritoneal drainage Recently, Richter [10] drew attention to the possibility of a safe closure of the common duct following choledochotomy, eliminating the need for both biliary and peritoneal drainage

HARM FROM UNNECESSARY DRAINAGE

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peritoneum for limiting the spread of infection, he (Richter) has felt that the stump can, with far greater safety, be trusted to the peritoneum than to the retroperitoneal tissues where infection usually tends to spread to the proportions of a cellulitis That the stump can with impunity be so treated, only the more surely proves how nearly free from organisms the mucosa must be, and how little must be the tendency to reopen It seems to me that nothing more clearly emphasizes this point than the fact that the greatest factor of success in intestinal surgery is the peritoneum

Persistent bleeding from the gallbladder bed is of rare occurrence except in jaundiced patients In the removal of the gallbladder, we begin at the fundus, incising the peritoneal reflection and freeing the gallbladder from the liver by gentle blunt dissection with the finger A pack is held by an assistant against the raw surface as the gallbladder is stripped away, and usually by the time the artery and duct have been ligated and cut, the oozing has stopped I believe that spending an extra few minutes for the purpose of so controlling hemorrhage is time well spent if it will avoid the necessity of leaving a pack in the peritoneum When, however, such bleeding is excessive, or when it fails to subside within a reasonable length of time, it demands the factor of safety offered by a gauze pack

Leakage of bile from the raw surface of the liver is not common It has not been necessary in our experience to drain because of such occurrence Following the method of hemostasis suggested, the raw surface is absolutely dry We do not attempt to do anything with the raw surface of the liver

EXPERIMENTAL STUDIES

With the purpose of studying the effect of drainage in experimental animals, during the last few months, I have performed forty cholecystectomies on dogs, in each case removing a normal gallbladder In the first twenty-five dogs, following the typical operation, the stump of the cystic duct was ligated with a No 1 catgut The ligature, left sufficiently long, in each case was used to keep the drain in contact with the stump of the cystic duct by means of a suture In the first eight, cigaret drains were used, in twelve, rubber tubing having an outside diameter of one-fourth inch or a little more, was used In five, a strip of dry gauze was inserted with the tube down to the stump of the duct In the series, one dog died immediately after operation, a second died of peritonitis, and a third tore open his wound and had to be killed There were several other wound infections

The animals were carefully watched for a week or more for evidence of postoperative biliary leakage To supplement inspection, the drains were removed after four to six days and tested chemically for bile None was found

In a second series, ten dogs were drained with rubber tubing after the duct had been ligated with heavy linen or silk My purpose here was to determine whether nonabsorbable material would be more frequently followed by leakage than catgut In five animals, a tight closure was made In none of the second series was there leakage

A characteristic feature at necropsy was the extensive adhesions in the upper abdomen, in spite of the fact that a relatively small incision was made and the minimum of peritoneal trauma was inflicted This, of course, our clinical experience with secondary operations on the gall tracts verifies The five controlled animals showed adhesions also, but they were fewer in number and not so heavy

It may be argued here that the analogy with the human in whom cholecystitis is present is not exact, because of the absence of infection, but observation of the drain tract after removal of the drain makes me believe that the conditions about the stump of the duct are essentially the same Positive deductions cannot, of course, be made from such a small series of experiments, yet, I believe that a ligated cystic duct within the peritoneum is almost absolutely safe I had expected to produce occasional leakage, at least, in this work Failing to do so, I am led to the conclusion that even under such unfavorable conditions as those introduced by the drain, namely, large foreign body and infection, the duct normally tends to heal

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The incidence of postoperative hernia is, of course reduced to a minimum by tight closure of the peritoneum and hernia is by no means infrequent following drainage for operations on the gall tracts The omission of drainage is by no means an absolute method of avoiding accidental wound infection, but such wound infection is no more frequent than in any other clean abdominal wound

Lastly, a word about peritoneal adhesions The futility of corrective operative procedures aimed at the removal of adhesions is a matter of common knowledge That dense and crippling adhesions out of all proportion to the original disturbance occur is also quite generally admitted I believe it not unlikely, that as we continue in an increasing number of cases to avoid peritoneal drainage, the number of cases presenting recurring or continued distress will diminish.

104 South Michigan Avenue

15 Richter H M and Buchbinder J R The Omission of Drainage in Common Duct Surgery J A M A 73 1750 (Dec 6) 1919

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DR JACOB R BUCHBINDER Chicago It is, of course impossible to complete the arguments pro and con One must select one's cases We cannot indiscriminately close the abdomen after every cholecystectomy, but following the usual chronically infected gallbladder, when cholecystectomy has been done we may close without drainage where infectivity is of low grade and by closing without drainage we lessen the likelihood of biliary leakage After a gauze pack has been held against the liver for twenty or thirty minutes, the liver surface is dry although it is quite conceivable that a small

amount of postoperative biliary leakage from the liver may occur We have surmised on the second or third day where a little postoperative rise in temperature had occurred that there had been some such leakage, but the amount of such leakage never struck us as being an item of danger Concerning postoperative leakage from the duct diffuse peritoneal infection from bile would be a serious complication, but this leakage of bile is certainly much more likely to occur if there is a foreign body near or in the vicinity of the cystic duct than if the peritoneum is left clean In regard to suture and size of drain *There is no foreign body, no matter how* bland or smooth, that can be put into the peritoneal cavity without exciting adhesions Since the foreign body is apt to excite biliary leakage, drainage with a foreign body is bad However, to drain is a source of discomfort, not a source of danger, *but it helps to make a smooth postoperative course*

PARALYSIS IN CHILDREN DUE TO THE BITE OF WOOD-TICKS *

P D McCORNACK M D
SPOKANE, WASH

Paralysis in children following the bite of wood-ticks, while not unknown to the medical profession, has not been sufficiently described in the medical literature accessible to American readers As a result, most physicians are ignorant of the occurrence of this condition and, consequently, fail to consider this origin of paralysis when making their differential diagnoses

HISTORY

In 1903, while I was making an examination of a woman, aged 22, suffering from an almost complete motor paralysis of the extremities, a large wood-tick was found in the skin at the tip of the spine Immediately following its removal, improvement in the patient's condition began, continuing to complete recovery At that time search of the available literature disclosed no reference to similar cases In the last eleven years, ten cases of paralysis in children due to tick bites have come to my attention A recent search of the literature regarding this disease has been productive of considerable information

Borthwick,[1] in 1905, reported paralysis in sheep occurring over a large area of Cape Colony, which the sheep farmers had long recognized and attributed to the bite of a wood-tick Temple,[2] in 1912, reported from eastern Oregon four cases of his own, and nine of other physicians, of acute ascending paralysis in children, from the same cause Both of these are reported in condensed form by Nuttall[3] In 1912, Todd[4] sent letters to physicians in British Columbia asking them if they had met with cases of illness which had been ascribed to tick bites The object of his request was to ascertain if Rocky Mountain spotted fever, which was prevalent in Montana, and attributed to wood-ticks of a type found also in British Columbia, existed in western Canada In the replies, nine cases of tick bites in children, followed by paresis, paralysis, and, in some cases, by death, were reported In later articles, Todd[5] reported two additional cases of this illness in children He requested ticks from active cases for examination, and gave a review of the literature Bishopp and King,[6] in 1913, reported cases occurring in Montana, and at the same time Hadwen[7] visited British Columbia to investigate the occurrence of paralysis in sheep in that district During his visit, he found no paralyzed sheep but did find a large tick embedded in the back of one This finding, together with his recollection of published cases of curious paralysis in children where ticks were found attached to the back, gave him the idea that the condition might be caused by tick bites With ticks collected in this locality, he was able to produce the disease experimentally in sheep[8] Later a case of paralysis in a child was described by Strickland in Australia[9]

ETIOLOGY

Adults are rarely affected, practically all cases reported being in children Adults undoubtedly find the ticks easily and brush them off, which probably explains the lower adult morbidity Many mothers in our vicinity who take their children to the lakes for the summer frequently examine the bodies of their children for ticks, and often their search is rewarded by finding them, usually in the scalp The tick season may begin as early as February, and may last until August

Southern British Columbia, eastern Washington and Oregon Idaho and Montana are the usual localities Cases are also reported from Cape Colony and Australia

Among sheep it has been noted that it is the yearlings alone that become ill, older sheep having acquired an immunity No record of second attacks in either man or animal has ever been found

EXCITING ETIOLOGY

The wood-tick most commonly found is *Dermacentor venustus* which is also responsible for the transmission of Rocky Mountain spotted fever In sheep the ticks are usually located along the spine, but in man symptoms result from ticks embedded in the axilla, ear, temporal region and the occiput In animals, ticks are found on the healthy as well as on the affected, and the number of ticks on a subject does not seem to influence the severity of the paralysis, one tick producing the same effect as many A few cases in man are reported in which multiple ticks were removed The male ticks attach and detach themselves easily and frequently, and it is not known whether male ticks can produce paralysis in the absence of the female Experimentally, paralysis has always been produced through the agency of tick bites, but it has been impossible to transmit the disease by inoculations, no parasite has been found, and bouillon cultures from diseased animals have remained sterile This is well illustrated by the following experiments of Hadwen[7] and Hadwen and Nuttall[8]

1 Tick transmission Total paralysis occurred in a lamb on the eighth day after attachment of the tick.

2 Attempt to transmit from lamb to lamb by inoculation Inoculations of material from brain, spinal cord and cere-

* Read before the Section on Diseases of Children at the Seventy Second Annual Session of the American Medical Association Boston June 1921

1 Borthwick Tick Paralysis Affecting Sheep and Lambs Vet J London **7** 33 1905 (abstract of report to chief veterinary surgeon Cape Government)

2 Temple I V Acute Ascending Paralysis or Tick Paralysis M Sentinel **9** 507 1912

3 Nuttall G H F Tick Paralysis in Man and Animals Parasitology **7** 95 1914

4 Todd J L Canad M A J **2** 686 1912 **2** 1118 1912

5 Todd J L Canad M A J **4** 825 1914 **9** 994 1919

6 Bishopp F C and King W V Additional Note on the Biology of the Rocky Mountain Spotted Fever Tick Econ Entomol **6** 200 1913

7 Hadwen Seymour On Tick Paralysis in Sheep and Man Following Bites of Dermacentor Venustus, Parasitology **6** 283, 1913

8 Hadwen Seymour and Nuttall G H F Experimental Tick Paralysis in the Dog Parasitology **6** 298 1913

9 Strickland C Note on a Case of Tick Paralysis in Australia Parasitology **7** 379 1914

bellum of the affected lamb produced no paralysis in the second lamb Repetitions of these inoculations were uniformly without result

3 Tick transmission Paralysis occurred in a lamb on the eighth day after attachment of the tick Improvement began on the ninth day, and recovery was complete on the twelfth day, without removal of the tick Necropsy findings after killing the sheep were negative

4 Experimental inoculation with mashed ticks Susceptible animals were inoculated by both engorged and unengorged ticks without results

5 Experiments with guinea-pigs with the following negative results (*a*) Inoculated along the back with a few drops of fluid from mashed ticks, (*b*) Intraperitoneal injection of 2 c c of defibrinated blood from a lamb experimentally paralyzed, (*c*) Inoculated subcutaneously with brain emulsion

6 Death observed in guinea-pigs on the fifth to seventh day following the application of Dermacentor venustus larvae and nymphs (young ticks)

7 Paralysis observed in a dog nine days after attachment of a single *Dermacentor venustus* Complete recovery occurred on the sixteenth day though the tick was not removed until the eighteenth day

PATHOGENESIS

The exact nature of the disease has not been determined In favor of the infectious theory is the incubation period of from six to eight days, which has been determined in the animal experimental work Opposed to this explanation is the usual absence of fever and the negative results of inoculation On the hypothesis that the disease is infective, Hadwen and Nuttall state that the negative results which follow the experimental use of the prematurely removed ticks may be explained on the ground that the hypothetic infecting parasite undergoes development in the tick while the latter is attached to the host, and that the pathogenic parasite only enters the vertebrate host after the tick has remained attached for some days The paralysis may, on the other hand, be explained as resulting from toxins absorbed from the ticks and elaborated, especially at the time when engorgement is complete To strengthen the toxic-absorption theory, the period of incubation might be explained on the assumption that it is only when the tick begins to engorge or feed rapidly, some days after it has become attached, that it gives off sufficient hypothetic toxin in its saliva to produce pathogenic effect[8] No doubt both man and animals affected have been exposed to previous tick bites without symptoms, but an anaphylactic origin seems to be disproved since one attack seems to confer a lasting immunity, if the origin were anaphylactic, there would be multiple attacks after sensitization had occurred

PATHOLOGY

At the point of attachment of the ticks, subcutaneous hemorrhages are found and the blood seems to have partly lost its power of coagulation The hemorrhages have some resemblance to those seen in hemophilia About the tick is deposited a dark reddish patch of excrement At necropsy, in animals dying from this paralysis, slight congestion of the brain and cord has been found by some observers

SYMPTOMS

The symptoms are usually characterized by the sudden onset, in a previously healthy child, of weakness in the muscles of the extremities, staggering, difficulty in standing, and disinclination to active play, rapidly followed, in a few hours, by more or less complete motor paralysis The child is often unable to stand, hold the head erect, or feed himself, although consciousness is not impaired The onset may be accompanied with convulsions The incubation period in children is doubtful, but, by experiments in animals, it is found to be from six to seven days after the ticks are attached Rapid pulse and a slight rise of temperature have been noted A large engorged wood-tick is found somewhere on the body, most often in the scalp, occasionally in the external ear, the axilla and other protected areas

REPORT OF CASES

The following case histories of patients whom I have seen, together with short reports of cases given by physicians in this locality, are illustrative My cases are given herewith

CASE 1—Miss H, aged 22, of Hillyard, Wash, seen in 1903 gave a negative family and personal history This robust young woman had been unable to walk or stand for a period of three weeks She could not feed herself and held up her head with great difficulty During the routine of a complete physical examination, a large wood-tick was found embedded in the skin over the coccyx The tick was removed, but no prognosis was given In a few days she was entirely well

CASE 2—Baby B, aged 2 years of Mullan, Ida seen in June 1909, gave a history of sudden inability and unwillingness to use the lower limbs On questioning as to wood-tick bites, the mother stated that she had removed a large tick from the scalp just before coming to the office Examination disclosed nothing but an apparent complete paralysis of the legs The child was well the following day

CASE 3—C S a boy aged 1 year and 10 months, seen in July, 1917, was referred by Dr Barnhardt of Spokane, Wash Family history and all personal history was irrelevant The child was brought with a complaint of sudden great difficulty in walking He had spent several days at a nearby mountain lake The first morning at home, he refused to walk, revealed a peculiar activity of his hands, was awkward and could scarcely handle his toys The boy was well nourished, the feet were slightly swollen from sunburn, the heart lungs and urine were negative He was normal except for an inability to walk, and the fact that he would not pick up objects from the floor Mentally he seemed very inactive Heat and cold sensations were normal A large wood-tick was discovered attached to the scalp in the right temporal region Inside of twelve hours after removal of the tick the boy was able to walk about the room The next day he had completely recovered

CASE 4—K L D aged 4 years, seen in August 1917, was referred by Dr H P Marshall, Spokane Wash Nothing in her previous history bearing on the case presented itself except the fact that she had always been very active and extremely nervous She lived in a small "jack" pine grove Four days before onset the child had loss of appetite, with some abdominal pain and great restlessness She had been given very drastic treatment for suspected worms Dr Marshall was called because of severe pains in the knees and an absolute inability to stand The child appeared very well nourished She had pain in the legs and refused to try to stand The hands and arms were normal A large wood-tick was found in the scalp above the left ear On the sixth day after removal of the tick, the pains in the legs and the inability to stand had disappeared and the child was normal, except for the appearance of an enlargement of the glands of the neck

CASE 5—E L a boy aged 3 years and 6 months of Cocolalla Ida seen in August, 1918, gave a negative family and previous personal history Seven days before, he had retired in good health but next morning could not walk Generalized weakness of the muscles increased in severity to the time of examination He was unable to hold his head erect and had great difficulty in feeding himself An unsuccessful search for a wood tick was made, the head was then shaved and

well cleaned, and a small wound, similar to that in other wood-tick cases, was found and cauterized Cathartics, baths and other methods of elimination were used The mother reported that she had found several wood-ticks on this child during the spring, but that he had had no symptoms at that time The spinal fluid was negative The next day the mother reported that the child was walking much better His further improvement was very slow and he did not begin to walk well for five weeks and was very weak for some time In June 1920, the mother reported the child as well, except for a slight difficulty in the use of his left hand From the history, the course of the case, and the finding of a wound in the scalp, it was assumed that a wood-tick had caused the symptoms and after engorgement had loosened its hold and had fallen off I recognize the possibility that this may have been a case of atypical infantile paralysis

CASE 6—Q R a girl, aged 5 years, of Spirit Lake, Ida seen in May, 19 9 whose family history was negative, after an 8 mile wall in the woods, had complained of being very tired, and had cried with an ache in the legs during the night The next morning she could not get out of bed and, even with assistance, could not stand, but she seemed well when in bed sang, played, and ate heartily She could not put her feet to the floor because of pain, and could not stand, the head dropped forward or backward, she could not speak plainly and had some difficulty in swallowing The picture was the most pathetic of all I had seen A large wood-tick was found over the occiput The child gradually improved after the tick was removed and was entirely well in about one week

CASE 7—M B, a girl, aged 8 years of Vera, Wash, seen in May, 1920, was referred by Dr Barnhardt of Spokane Wash The family history was negative Four days previously, the parents noticed that the child was unusually nervous, but as she was just recovering from measles little anxiety was aroused Later she was dizzy staggered around her room, and dressed herself with difficulty Speech was disturbed, and she seemed irrational at times The left eyelid was swollen and inflamed She had a staggering gait with weakness of the lower extremities A tick was found in the right axilla It was detached by the use of chloroform, and immediate improvement began About the attachment of the tick there was an ecchymotic spot about one-half inch long and one-quarter inch wide The skin and subcutis were necrotic to a depth of about one-quarter inch This area was curetted and cauterized The highest elevation of temperature noted was 99 4 The blood was normal except that there was a leukocytosis of 13 400, of which 11 per cent were cosinophilic cells The tick was sent alive to Dr H Gideon Wells of the University of Chicago, who found it to be an impregnated female resembling *Dermacentor venustus* The tick attached itself to a guinea-pig, and on the sixth day moderate fever and decreased capacity to use the hind legs were observed Necropsy revealed nothing to explain this condition Inoculations from the first pig were unsuccessful in a second lot of pigs These findings confirm those of Hadwen

CASE 8—N G, a girl, aged 5 years, of Libby Mont, in May 1921, was referred by Dr Stenberg of Spokane, Wash The family history was negative May 25, 1921, the child complained of being sick, and could not stand May 26, the paralytic condition continued the same, with the addition of great difficulty in breathing May 27 she was sent to Spokane, a diagnosis of infantile paralysis having been made The child was paralyzed in both arms and both legs, and the reflexes were absent She could not talk or swallow, and was in a semistupor An engorged wood-tick was immediately found and removed from the scalp The breathing became more shallow, the pulse very irregular and at times absent The child died of bulbar paralysis fourteen hours after the removal of the tick Necropsy was not permitted

The following cases were reported to me by physicians in this vicinity

Dr W C Lindsay, Kellog, Ida In July, 1917, a previously healthy boy, aged 7 years, was unable to get out of bed or to stand He was prostrated, the temperature was subnormal, the legs were cold, the pulse was fast and thready, and he vomited The lower limbs were flaccid and sensation was normal He was treated as a case of gastro-intestinal intoxication but became rapidly worse Accidentally, a tick was found in the occipital region in the center of an inflamed area, 2 inches in circumference The tick was removed, and the area aseptically treated Next day the boy was well The incubation period in this case was apparently three days, estimating from a single exposure in the woods

In April, 1920, a girl, aged 9 years, was recovering from tonsilitis On arising one morning she was unable to stand was dizzy, and vomited Throughout the scalp and on her pillow were found small dark particles like fine coal dust, which probably consisted of coagulated blood and tick excrement A large wood-tick was found in the scalp The recovery was quite slow in this case, possibly because the incubation period had been unusually long, nine days' duration being reasonably certain

Dr C E Worthington, Coeur d'Alene Ida A girl, aged 4 years died two hours before the physician reached her home She had been drowsy after the noon meal, and could not join the other children in their play during the afternoon She had had no appetite for dinner In brushing her hair a large wood-tick had been discovered and incompletely removed the mother allowing its head to remain in situ During the night she was found dyspneic and soon died

A girl, aged 6 years, refused her breakfast She seemed dazed and could not walk steadily She was pale, and the pupils were dilated A tick was found embedded in the scalp Recovery was complete seventy-two hours after the removal of the tick In neither of these cases could an incubation period be determined

Dr L J Stauffer, Rose Lake Ida, reported a case from Kalispell, Mont, in which a large wood-tick was found, during burial preparations, in the scalp of a little girl who had died from an obscure paralytic disease

Dr C J Kinsolving of St Maries, Ida, which is situated in a tick-infested valley in the mountains along the St Joe River reports a large number of tick bites with symptoms, but has never seen paralysis resulting His patients have shown vomiting, fever, prostration, loss of appetite and other general symptoms of an intoxication

I am of the opinion that if a thorough survey were made among the physicians of Idaho Montana, eastern Washington and Oregon, and Britisl Columbia, an enormous number of these cases could be collected

PROGNOSIS

Recovery is usually complete and rapid following the early removal of the entire tick, most of the children being normal within forty-eight hours Occasionally where the tick is not removed entirely or is removed after an extensive paralysis has occurred death may follow from respiratory failure I know of cases in which children with paralysis of obscure etiology have died, and in the preparation of the body for burial, wood-ticks were found in the scalp

It is not positively known, in cases of tick paralysis in man, whether recovery can take place without removal of the tick In sheep however, the disease may be of long duration, and recovery is not absolutely dependent on the removal of the tick A case is reported by Hadwen[7] of a shepherd carrying a paralyzed lamb all summer from camp to camp, with total recovery finally occurring, no tick having been removed

DIAGNOSIS

The physician usually realizes that he is dealing with an acute progressive extensive motor paralysis, which, from its course, presents a picture of extremely unfavorable prognosis He attributes the paralysis, with little confidence in his diagnosis, to poliencephalomye-

litis, meningitis, or to an acute intestinal intoxication, without manifest evidences of an enteritis

The direct diagnosis depends on the finding of an engorged wood-tick on an individual suffering with sudden paresis or paralysis of the muscles of the extremities, followed by rapid improvement in all symptoms after the removal of the tick unless respiratory paralysis has developed

The only case in my series in which a complete blood examination was made showed an eosinophilia This is possibly of great diagnostic importance, being indicative of animal parasitic infection

TREATMENT

The treatment consists in the removal of the wood-tick It must be searched for carefully, and is usually to be found buried in the hairy scalp or other protected places Great care must be exercised to remove the head of the tick, otherwise improvement in the symptoms may not occur Many ways have been suggested to secure the tick Gentle traction may be used, the tick may be covered with grease and, when forced to move to breathe, is easily removed, a lighted match may be held beneath the tick until it is too hot for it to remain attached to the skin, or the skin to which the tick is attached may be excised, kerosene and chloroform can also be used to force the tick to loosen its hold

CONCLUSIONS

1 Bites of wood-ticks, usually *Dermacentor venustus,* can cause a motor paralysis of the flaccid type

2 The paralysis is acute, extensive, progressive and usually ascending in its progress

3 In man, children are most commonly affected

4 Death may occur, usually by respiratory paralysis

5 Recovery is rapid and complete, following the complete removal of the tick before respiratory paralysis has occurred

6 Experimentally, tick bites have produced this type of paralysis [10]

Paulsen Building

ABSTRACT OF DISCUSSION

DR E. J HUENEKENS Minneapolis Two thoughts present themselves—first, the similarity to postdiphtheritic paralysis which would show that there may be an exotoxin, and the rapid recovery after removal of the tick, would also show that this is due to an exotoxin However without necropsy findings, we can only speculate Second some of these cases may be happening in other parts of this country and not be recognized In Minnesota there is a tick-infested district

DR FRANKLIN P GENGENBACH, Denver We have quite a number of cases of wood-tick bites and cases of Rocky Mountain fever in Colorado, and although I have seen children upset by bites of the ticks, I have never had a case of paralysis However, last fall I received a letter from a woman in Wyoming who reported the death of her 14 months old baby from the bite of a wood-tick She said that the condition had not been recognized

DR. JOSEPH BRENNEMANN, Chicago I wonder how frequent wood-ticks and wood-tick bites are Does everybody expect to get bitten where they are common? In what proportion of cases do alarming symptoms occur?

DR PETER D MCCORNACK, Spokane, Wash While visiting in Iowa just before this meeting, I mentioned this subject and was told of a case of removal of an enormous wood-tick from the scalp of a child There was no associated paralysis To further illustrate the widespread distribution of ticks in this country is the history obtained from a woman of a tick removed from her back when she resided in Boston This spring I requested four girls who were going for a two-day trip in the woods of eastern Washington to collect the ticks which they found on their clothes and bodies Sixteen ticks were obtained In our section, most people, while in the woods examine their bodies for ticks each night before going to bed Little is known in regard to the paralysis We do not know exactly what causes the paralysis and why not all tick bites in children are followed by paralysis Perhaps it is the impregnated female tick alone that is responsible In the cases in which the tick has been classified, it has been the female

10 It is requested that live ticks found on paralyzed patients be sent for further study to Dr H Gideon Wells University of Chicago with a description of the symptoms and such other data as may be of interest to him

NEEDED MEASURES FOR THE PREVENTION OF DEAFNESS DURING EARLY LIFE *

HAROLD M HAYS M D
NEW YORK

Too much attention has been paid to the acute otologic conditions of childhood, too little attention has been paid to the chronic otologic conditions or, at least to the causative factors which bring about deafness in later life The cure of an acute suppuration of the ear may mean the saving of a life, but is that of any more importance than eliminating factors which, if left uncared for, will mean the leading of a life of misery? The individual who is kept from the intellectual contact with his fellow men considers himself beyond all others I have been led to think more of this subject, during the last few years, because of the number of patients I have seen who were suffering from a hopeless progressive deafness which, no doubt, could have been prevented if they had been properly taken care of in early childhood, when some intercurrent infection or one of the exanthematous diseases started the trouble

The problem of the prevention of deafness in early childhood is both medical and educational Each of these aspects is of importance to the otologist, who frequently has to advise as to the proper schooling of children and also as to whether a deaf person should marry or not He should find himself in a position to answer all questions, for on his opinion rests the future happiness and welfare of the individual and his direct descendants

Deaf children divide themselves into three classes those who are hereditarily deaf, those who are congenitally deaf and those who have an acquired deafness The so-called deaf mutes belong to the first two classes and need our attention mainly from the educational point of view The third class needs our attention both from the educational and from the medical side Now what is the difference between hereditary and congenital deafness? How many otologists attempt to differentiate between the two? Very few, I am sure, and yet this differentiation is a most important one Hereditary deafness can be claimed only in those cases in which there is deafness among ancestors in the direct line One or two generations may have been skipped, but if one makes use of genealogical tables, such as occur in the writings of Love,

* Read before the Section on Laryngology Otology and Rhinology at the Seventy Second Annual Session of the American Medical Association Boston June 1921

Bell and Fay, he will find many cases of hereditary deafness which are directly traceable Congenital deafness is a deafness which takes place before the child is born, and may be due to a true congenital defect because of an abnormal development, or to syphilis in one or both of the parents Acquired deafness, on the other hand, comes on after birth, within the first few months or later on in childhood, during the first five years, the result of some febrile disturbances, one of the exanthems or because of certain localized conditions which interfere with the delicate mechanism of the middle ear Most writers who have studied the subject carefully assert that the majority of cases are the result of neglect of the ears after measles, scarlet fever and meningitis, which may be either of the epidemic type or one of the low grade meningitides so often caused by syphilis It is a sad commentary on our knowledge of the subject that over 30 per cent [1] of the inmates of our institutions for the deaf are children who have an acquired deafness which might have been prevented if taken in time

However, as our problem is a preventive one, our most important task is the prevention of deafness in acquired cases We may thus divide our subject (1) prophylaxis of the nose and throat, (2) the removal of tonsils and adenoids, (3) the care of acute nonsuppurative and suppurative conditions of the ears, (4) the care of the ears during and after the acute exanthematous diseases, and (5) the more careful treatment and testing of children's ears

PROPHYLAXIS OF NOSE AND THROAT

An unclean condition of the nose and throat of a child, by which I mean the accumulation of mucus and mucopus, will tend to an engorgement of the eustachian tubes which is likely to result in impaired hearing One must remember that the acuity of hearing of a child depends on the normal balance in the middle ear which can be maintained only if the tubal muscles are at a proper tension so that the drum and ossicles are automatically massaged with each act of swallowing It is a simple matter to keep the nose and throat clean, particularly if the child's health is up to par, but one must remember that if the vitality of the child is lowered in any manner whatsoever, be it from some generalized disease or from malnutrition, the problem cannot be handled by the otologist alone Children with rickets, marasmus or some other devitalizing disease are more prone to troubles in the upper air passages, and such diseases must received proper treatment before local treatment is attempted Very often there is no evidence of impaired hearing at this early date, which makes it more necessary for one to be on the lookout for trouble It is because of the history of these devitalizing diseases that one notes that the majority of cases of acquired deafness are among the poorer classes who have not had the opportunity for proper housing or medical care The prophylaxis of this class of cases is exceedingly simple The child's general health must first be brought up to par The local treatment consists in keeping the nose and throat clean, by the use of instillations of mild alkaline solutions by means of a medicine dropper, followed by drops of some soothing oil, like liquid petrolatum The alkaline solution should be used until the nasopharynx is thoroughly clean, and then the oil is used as a coating on the exposed mucous surfaces Such cleansing will ward off many an inflammatory condition and may be the means of avoiding a deafness later on in life

REMOVAL OF TONSILS AND ADENOIDS

The removal of tonsils and adenoids is a question of vital importance, particularly in relation to the subject with which we are dealing Although there may be controversies galore as to whether tonsils and adenoids should be removed or when they should be removed for the purpose of revitalizing the general health of the child, there should be no question about their removal when any sign of ear trouble occurs There are many men who believe that, in the course of time, cases of progressive deafness will seldom be seen because of the wholesale removal of tonsils and adenoids I cannot accept this optimistic view for although I do believe that they are the cause of many of the ear troubles in early childhood which give rise to deafness in later life, I have seen too many children with ear troubles after tonsils and adenoids are removed to feel that they are always the primary consideration In fact, sometimes after their removal, the eustachian tubes are so wide open that, unless the child is told how to blow his nose properly, he is only too liable to bring about a condition within the ear which is beyond repair

Realizing the important part that adenoids play, be they small or large, in interfering with the normal action of the tubal muscle I feel that they should always be removed if the child has shown any tendency toward ear trouble The large adenoid, in infants, which is of sufficient size to interfere with breathing or feeding, gives enough evidence of trouble to warrant its removal But it is the small adenoid, often not pendulous from the vault of the pharynx but springing from the region of the eustachian tube or the fossa of Rosenmuller, which is open to question in the minds of those who have not seen the aftermath, in the form of progressive deafness No matter how small the adenoid is, no matter at what age it is first noted, be it in the first months of life or during the second or third year, it should be removed as soon as there is any evidence that it is causing trouble, particularly with the ears Some of these masses may be so small and friable that they can be broken down with the finger without anesthesia, while others will need a more severe operation with the curet under ether narcosis

As a general rule, the majority opinion is in favor of leaving the tonsils in situ until the second year of the child's life, unless they are found to be directly responsible for systemic disease or have been the seat of repeated local infections However, one must not lose sight of the fact that the tonsils may cause impairment of hearing because of their close proximity to the eustachian tubes The elimination of irritants from these tonsils, aside from their direct pressure on the tubes, may cause ear trouble which will be apparent if a suppuration or an inflammatory reaction occurs, but will often not show itself until there is some manifestation of impaired hearing later on If the tonsils are left in until that time, their removal may or may not cause an arrest of the progress of the condition In the ordinary case, I think it advis-

1 A test of the hearing of 342 children made at the Institution for the Improved Instruction of Deaf Mutes New York City showed that 129 or 37 73 per cent could distinguish words spoken in a loud voice with mouth to the ear forty-one or 11 99 per cent could hear vowels under the same conditions fifty three or 15 49 per cent were doubtful and 119 or 34 79 per cent had no hearing

able not to remove the tonsils before the end of the second year of the child's life, but if I have any evidence of impaired hearing before that time, I believe that I am erring on the side of safety by removing these tonsils as quickly as possible Infants who are suffering repeatedly from earaches and who, on inspection of the drum, show evidence of acute inflammatory conditions, children who suffer from prolonged suppuration from the ears at an early age, who have tonsils of large or moderate size, are much better off when the tonsils are removed Emerson is of the opinion that later on in life the tonsils are responsible for the continuation of an ear trouble, because of the toxic absorption which takes place through the system by the elimination of the products of the bacteria contained therein and because of the chronic localized pharyngitis which arises If this is so in adults why is it not equally true in infants when the general resistance is far lower?

ACUTE CONDITION OF THE EARS

Attention to the repeated earaches in children is not as close as it should be The child is ordinarily seen first by the general practitioner or the children's specialist who, if he is especially acute is able to determine the amount of local inflammatory reaction However he is most often content if the pain the rise of temperature and the local inflammation subside How often does he attempt to find out whether the hearing is impaired? I admit that this is a difficult procedure, but it can be done and it should be done If an otologist is taking care of the case, he is often equally at fault, but in the majority of cases, the otologist is called into consultation once or twice and is never advised of the case after that No child who has had more than one attack of earache should be allowed to go without a hearing test and if the hearing is found to be impaired, remedial measures should be started at once The drums may need but a slight massage, or it may be necessary to do a careful politzerization Or some causative factor will have to be sought and eliminated

What has just been said about nonsuppurative inflammatory conditions is even of more importance in those cases in which there has been suppuration It has been our custom too often, in the past, to be content to clear up the discharging ear But our duty is but half done The discharging ear has been an infected ear Certain deposits have taken place in the tympanic cavity, such as the deposit of fibrin and perhaps inspissated pus which may make an alteration in the hearing mechanism which may be permanent The eustachian tube may still be inflamed so that no air reaches the middle ear, or else a small perforation dry and crusted over, may remain unnoticed These are conditions which can be easily remedied at the time but which are sure to leave their mark, later on if neglected Unfortunately again, the family physician or the pediatrician is satisfied when the suppuration has stopped because it is seldom apparent to him that the child's hearing is sufficiently impaired to need attention at that time All children's ears should be tested after any suppurative condition, and one should not be satisfied until the hearing has been brought back to as nearly normal as possible I have had sufficient evidence, in a number of cases, to warrant my feeling that impairment of hearing is frequently present after a suppuration has ceased, and that the hearing can be brought back to normal if proper care is taken First one must see that the eustachian tube is open Secondly, he must see, by vibratory massage, that the drum is moving properly Thirdly he must be sure that the perforation in the ear drum is properly closed And fourthly and of as great importance, he must eliminate all causative factors that will tend toward a recurrence of the condition, such as the removal of tonsils and adenoids the clearing up of nasal sinus disease so ably brought to our minds by Dean, and the building up of the general constitutional condition

One cannot close the question of the acute suppurations of the ears in children without dwelling for a moment on what may be called the conservative mastoid operation Phillips and others have pointed out that regardless of the acute symptoms present which would determine us as to the advisability of operating on the mastoid, for the purpose of conserving the hearing, the suppuration must not be allowed to exist for too long a time Some of these children are allowed to continue with a suppuration for from four weeks to two months, and as long as there are no acute symptoms, such as a rise in temperature, and as long as the child feels perfectly well, nothing is done for ears but periodic douching If the discharge is mucoid rather than purulent, the tonsils and adenoids are removed, if this has not been done before In an infant no signs of deafness will be noticeable In an older child, the parents or the physician may notice that the child is inattentive As long as the suppuration continues with pulsation of the drum there is always the possibility that some part of the mastoid is involved and just so long is there a possibility that a permanent impairment of hearing will result unless something of a radical nature is done I have frequently spoken of this in previous papers, and wish to emphasize it again I consider that any suppuration extending for any length of time which has been associated with an acute inflammatory process should be eliminated even if it means the opening up and cleaning out of the mastoid cells I have yet to operate in the first case of this kind without finding sufficient evidence in the mastoid cavities to warrant my doing so Once in a while a case like this will clear up of itself, but, invariably, that case will eventuate in progressive deafness I am at present watching an unruly child who was allowed to continue with a discharge for over two months The circumstances were such that I could not operate I am sure that after puberty the boy will be consulting some one because of his diminution in hearing

CARE OF EARS DURING AND AFTER EXANTHEMATOUS DISEASES

The vast amount of harm that is done to ears during the exanthematous diseases, particularly measles and scarlet fever and meningitis, has seemed to be fully recognized The ears of the children are well taken care of during the acute stages of the disease, and remedial measures are at once used But what happens after the acute condition subsides? How many of these cases are properly followed up after the patient leaves the hospital? Yet if one glances over his histories of progressive deafness later on in life, he finds that frequently there is a history of the trouble having arisen during or after one of these three diseases Meningitis with deafness often means that the nerve has become affected or that there has been some intracranial affec-

tion, and the condition frequently manifests itself at the time of the disease and so is given hopeless attention But in scarlet fever and in measles, there is either a residual process left or there is a continuation of the catarrhal process which forms part of the disease The acute inflammation has subsided or the suppuration has ceased and, at the time, the impairment of hearing is so slight that it passes unnoticed But certain adhesive processes are left which mean permanent impairment of hearing—processes which, I believe, could often be remedied, if taken in time There are some who feel that the hearing defect is caused by toxic processes during the disease, but there are others of us who are convinced that the deafness is due to neglect of the local trouble after the child leaves the hospital Every parent who takes from the hospital a child who has suffered from one of these contagious diseases, should be advised to consult an ear specialist at once and, if there is the slightest impairment of hearing, every care should be taken to bring it to normal as soon as possible I have sufficient data on hand to know what can be done in this way, and all of us have sufficient data in our histories of progressively deafened patients to realize that something more should be done for these cases than is done at present

MORE CAREFUL TREATMENT AND TESTING OF CHILDREN S EARS

I have indicated the kind of treatment that may be employed to prevent deafness I have not taken into account the child who has been found to be suffering from slight impairment of hearing by either the teacher, the parent or himself A child of school age is usually a sensible child whose hearing can be properly tested and whose ears can be properly treated There are two factors which are of a great deal of importance in such a case Invariably such a child has some form of nasopharyngeal obstruction which should be corrected, or else he has been blowing his nose improperly In former papers I have spoken of pocket handkerchief deafness This results in a relaxed ear drum which is an exceedingly difficult condition to treat Children should be taught to blow their noses properly and not to use them like trumpets Only one nostril at a time should be held and, if air is felt to force itself into the ear then, the nostrils should not be held at all

Naturally, in preventive treatment, one must eliminate all causative factors either in the nose, throat or ear or in the general system Next of importance is the proper massage of the drums at regular intervals The eustachian tubes of children are far more widely open than they are in adults, and proper politzerization is a simple procedure when one has once gained the confidence of the child It is amazing to see the vast, immediate improvement in the hearing of these children after careful politzerization A medicated vapor should be used in the Politzer bag or the connection between it and the nasal attachment I have frequently seen hearing, which was zero to the watch before treatment, return to normal after the treatment and remain so for a considerable length of time The treatment will have to be frequently repeated, particularly after the child has had a severe cold However, a word of warning should be given here Too strenuous treatment of children's ears will result in more harm than good Careful judgment must be exercised in every case I hesitate to say that I have seen the hearing made worse by overtreatment, but such is the fact Catheterization is a very difficult and often dangerous procedure in children, and it is wise to feel that a tube which cannot be dilated by inflation through the Politzer bag is a tube which is suffering from a pathologic obstruction which needs more attention than inflation Aside from the above mentioned procedure, one may make use of a mild massage of the drum by means of a Siegel otoscope or an electric otoscope attached to an electric massage apparatus The massage should never be given with sufficient severity to cause any engorgement of the drum

EDUCATIONAL PROBLEM

The educational problem of the prevention of deafness has not been considerd with sufficient seriousness by the otologist It has been left in the hands of educators who have been more interested in the congenitally deaf child But medical men are realizing more and more that they must acquaint themselves with the various factors which lead to deafness in childhood, and with those factors which arise in childhood and bring about deafness later on in life The problem divides itself into three parts (1) education of parents, teachers and physicians to those factors which give rise to deafness, (2) the proper interpretation of causative factors in early childhood which can be corrected at that time and (3) preventive measures which will arise during the routine examination of children's ears

1 *Education of Parents, Teachers and Physicians as to the Factors Which Give Rise to Deafness*—Certain cases of deafness are due to transmission of weaknesses from the parents, and may be considered congenital Too much stress cannot be laid on the obtaining of the history of deafness and the possibility of the weakness of the ear mechanism being transmitted Such cases are not essentially ones of hereditary deafness, and a great deal can be done to prevent the deafness occurring in the child, if proper care is given to the nose, throat and ears during the early years When there is a history of deafness in the family, the parents should be carefully advised that any children, the result of their marriage, must receive more careful attention than children who spring from parents or forebears who have never had any trouble of that kind The duty of disseminating this knowledge rests with the parents, the teachers and the physicians, particularly the latter, who are brought into more intimate contact with the family The question of whether the educators should go so far as to advise deafened people not to marry is another matter and cannot be taken up in detail here Deaf adults will marry, sometimes intermarry, regardless of any advice that is given them But the problem becomes a more serious one if there is a history of syphilis in both father and mother or in either one of them One has only to consult well worked out genealogical tables to appreciate this fact Of course, neither parent may be aware that he or she has syphilis and, therefore when deafness becomes evident in the child, a blood test should be made on the parents and the child It may be possible, if the disease is discovered in time (but this problematical), that the diseased condition may be partially or completely overcome It would be more than worth while to have a census of the deaf taken in each decade to be handed over to such an organization as the Volta Bureau, which could then be in a position to distribute the propaganda so necessary to instruct parents in the proper care of their deaf children

2 *Proper Interbretation of Causative Factors in Early Childhood Which Can Be Corrected at That Time*—This problem has been taken up in detail in the preceding paragraphs The laity is sufficiently educated at present to understand medical problems explained to them in a simple way People have come to appreciate the importance of the acute ear diseases and mastoiditis and insist that a discharging ear receive proper treatment But what they do not understand is that the ear which has stopped discharging, and which is still lacking in hearing acuity, is a great menace to the growing child and may mean untold unhappiness later on in life Some of these problems can be dealt with very simply in childhood, but, if neglected, become one of our hardest problems after the child has got beyond the age of puberty If we glance over the causative factors of deafness in adult life, we find that invariably there is a causative factor in childhood which perhaps was not apparent to the individual until it was brought to his attention at this late date In our various leagues for the hard of hearing, throughout the country, we are trying to work out this problem now, and the possibilities for the prevention of deafness, from the knowledge thus gained, will be very great In fact, our knowledge has increased so greatly during the last ten years that all of us feel that the next ten years will allow us to bring it more accurately before the public

3 *Preventive Measures Which Will Arise During the Routine Examination of Children's Ears*—Our greatest problem is the routine examination of children's ears Parents are careful about the looks of the outside, but are very careless of the workings of the inside, of their children s ears During early child life, a child's hearing should be variously tested, by any means at hand, particularly if he has had any acute condition of the nose and throat or of the ear itself As soon as any trouble is discovered, the advice of a competent specialist should be sought But parents will always be careless in this regard, and so the measuring of hearing acuity will rest on those who are educating the children Routine examination of children's ears in school must, in time become as important as the examination of their eyesight and teeth We must not rest until it has become so Nurses can be instructed to make the simpler examinations, and those children who need more detailed study can be separated from the rest and turned over to competent specialists Dr Josephine Baker of New York states that over 4,000 children who have defects in hearing are attending the public schools, and that little is being done for them at the present time School clinics have to be established and the cases studied in such a way that the children are properly seated, according to the amount of hearing defect they have, or else are sent to schools for the deaf One important problem arises here Most of these children need medical treatment of one kind or another It is unwise to send them to clinics which are far away from the school and to which they cannot come regularly Clinics must be established in the schools themselves so that under competent aurists, the treatment can be expedited Little time will then be lost, and the problem can be more readily studied from the educational and medical standpoint

CONCLUSION

Let me emphasize these points There are more deaf adults in the United States than there should be, there are more deaf adults, because the moderate defect in hearing in childhood was not properly taken care of, and the problem of the prevention of deafness can be handled intelligently only by a precise cooperation between the parent, the educator and the physician

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SOCIAL ALLEVIATIONS OF ADVENTITIOUS DEAFNESS*

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Deafness, no matter if the world finds it a petty affair, a joke or an annoyance, is truly a grief to him who has it As in the case of any other physical handicap, deafened people must adjust themselves to deafness, and this reconstructive work must be comprehensive if the man or woman is to hold a place among independent citizens Every person who acquires deafness in adolescent or adult life needs some degree of reconstruction Many must either change their occupation [1] or become charges on their friends or their community, all must readjust their views of life and make the effort, no matter how difficult it may be, to keep mentally and spiritually normal

The deafened themselves differ from other handicapped people in that they have organized and developed their own reconstructive work for their own kind, preaching the gospel of reconstruction, as it were, by example [2] Public indifference and ignorance have been hard to change In Newark, N J, where a flourishing group exists, an article on the work of this organization was published by a local newspaper Another column carried comment to this effect "Everything is organized nowadays We note that hard of hearing people have a league of their own, we may expect to hear of a League of Persons with Boils on Their Necks"

Ignorance and indifference, however, are being overcome rather more rapidly than one might reasonably expect, and but one formidable enemy of this movement remains Strange to say this is an enemy in the very household of the deafened, it is the deafened wealthy man or woman whose sensitiveness takes the form of refusing to help lest his own handicap become known There are very many of these They fill great places in government, finance, industry the professions literature, society, yet, like all unreconstructed deafened people, they fear that the world will know of their deafness, even though it is minimized for them by their wealth and position One of these is a man who is widely known as a soldier, novelist and playwriter He made a modest contribution to a deafened organization, and insisted that it be anonymous although he has ably and generously assisted other philanthropies by writing and speaking in their behalf His deafness is so pronounced that it cannot be hidden Such people are the greatest problem we deafened have, it is inconceivable that they should not be willing to help their own The friend who will show

* Read before the Section on Laryngology Otology and Rhinology at the Seventy Second Annual Session of the American Medical Association Boston June 1921

1 Thirty seven per cent change their occupations

2 The first deafened man to organize other deafened persons was Edward B Nitchie founder in 1910 of the New York League for the Hard of Hearing

us how to open this particular oyster will deserve the canonization of our grateful hearts Perhaps you who approach them so closely can tell us the way

However, in spite of indifference, ignorance and sensitiveness, the deafened have attained the dignity of no less than sixteen organizations, which are doing various forms of social work in New York, San Francisco, Chicago, Jersey City Newark, N J, Toledo, Ohio, Pittsburgh, Los Angeles, Cleveland, Boston, Philadelphia St Louis, Washington Dayton, Ohio, Toronto and Kansas City Mo They have organized, in cooperation with some of our leading otologists, the American Association for the Hard of Hearing to work in the national and international fields This is at present holding its second annual meeting in Boston, and it has already nine constituent bodies (the Leagues for the Hard of Hearing in New York San Francisco, Chicago, Jersey City, Newark, Toledo, Pittsburgh and Los Angeles and the Lip-Readers' Club of Cleveland) besides a considerable number of individual members It is about to change its name to one which shall better describe it—the American Federation of Organizations for the Hard of Hearing

These sixteen organizations represent hundreds of rebuilt lives—deafened people who have overcome their handicap and are working for the good of other deafened people They represent literally thousands of deafened people whose lives have been at least touched and ameliorated who will never be quite as lonely despairing or demoralized as if this movement had never started In each locality they make their mark, they win the respect of all social welfare organizations, they educate employers of labor to the possibilities of the deafened worker, they show school boards that free instruction on lip-reading is the right of every deafened adult for economic reasons as well as humanitarian, they work for the discovery and treatment of partial deafness in schoolchildren and for special instruction in lip-reading for such children in their schools without segregating them with the deaf As a typical case, let me cite the story of a boy of fourteen whose parents on the advice of an organization, have placed him in a private school of lip-reading for the summer He will enter high school next fall, taking a cooperative industrial course His mother told the social worker that she had consulted a number of otologists, who all agreed that her son's deafness was incurable, but did not tell her what could be done to lessen the handicap At last she went to an otologist who is deeply interested in this organization's work and is constantly in touch with its workers He told her that her son must study lip-reading without any delay, and that his vocation must be carefully selected Her gratitude overflowed her vocabulary, her problem was solved at last "That—that—is a Hero-Man!" was her cry

All these things may be called the outside work of the sixteen organizations their inside work is naturally more concentrated It is the complete rebuilding of lives Their members study and practice the art of lip-reading, they procure employment, they learn how to make good use of hearing devices, they attack the non-social tendencies of the deafened toward isolation and ultimate demoralization by conducting every possible sort of activity which can restore a normal mental and spiritual attitude These activities include parties of every description, cards, games, dances, outings, educative groups to supply in a special way what the deafened cannot get in a general way, among the latter are lectures, Bible classes, crafts, instruction, story telling, classes in social dancing, gymnastics and folk dancing, and dramatics, one organization has a small but earnest brass band Nearly all have their own headquarters, a room, a suite or an entire floor in an office building, four maintain their own club houses one operates a successful tea shop, and one conducts an up-to date vocational bureau and is otherwise so comprehensive that it truthfully calls itself a community center for the deafened

It should be pointed out that there is no intention in all this to make life easy for the hard of hearing by segregating them from an unsympathetic outer world On the contrary, the object is to develop alertness independence and initiative, so that the reconstructed individual goes back into the one great world of work and play and commands its respect And not only does he develop alertness, independence and initiative, but through good comradeship a spiritual healing takes place and the impulse to serve is born in him He goes forth therefore ready and able to perform the full duties of a citizen—to pay his way, to keep fit and happy, and to help others Many letters attest the truth and the force of this for the people are so happy in their changed lives that they must not only say so, but offer service and what is more, they pledge themselves to share the support of the organization which has helped them by making monthly or annual payments which are nothing short of remarkable, considering their means

It may be asked what types are served by these organizations Every type of human being plus the tragedy of acquired deafness In every case there is the color of tragedy, it may be a tint, it may be deeply dyed Many lives are saddened as in the case of a prosperous business man who found in his local organization just the happiness he needed, and even the hearing device that remade the world for him many lives are thwarted, but some are definitely warped by deafness What relation, for example, does acquired deafness bear to crime? Let us consider two stories from the records of one of the larger organizations

A was the 18 year old son of foreign born parents who did not recognize his deafness Misunderstood and ridiculed, he ran away from school to New York He was picked up in questionable surroundings by the police and brought to organization headquarters by a probation officer Work was found for him and he was encouraged to study lip-reading

B is an east side Italian committed to prison on conviction of assault His case has been investigated and it is clear that he was an innocent victim for no other reason apparently, except that he was a foreigner and deafened He urged the necessity of getting him a job at once, saying that the police were watching him and that as he had been in prison even temporary unemployment was a peril As this happened during the present industrial crisis, it was serious, but, fortunately, employment was found for him He had been known to this organization before his conviction as a respectable working man supporting a paralyzed mother, but since his imprisonment he has shown signs of a growing mental depravity and it is now doubtful whether much can be done for him

From these instances, it is plain that the deafened boy or man does not always get fair treatment in the

courts because it is often assumed that deafness is feigned Organizations, when more widely known, will be able to forestall these injustices as well as to alleviate their after-effects and also the effects of punishment that has been well deserved [3]

While it is true that the deafened are organized and are doing great works for one another, and in a larger sense, for the public good, they have one class of friends who work faithfully side by side with them, these friends advise them and they also share in government, financial sacrifice and all other responsibility These friends are the great-hearted, progressive otologists of America Without them, one might almost say, social work for the deafened would be impossible It certainly could not hold its present high standard Otologists have founded more than one organization, they are leading more than one as presidents, they are now organizing the deafened of several cities, they serve on many consulting boards, and an otologist, Dr Wendell C Phillips of New York, founded our American Association for the Hard of Hearing and is now its president Among the most active may be named Dr Harold Hays, for the last seven years president of the New York League for the Hard of Hearing, Dr T R Chambers, organizer and president of the Jersey City League, and Dr M A Goldstein, founder of the Saint Louis League, Dr Shambaugh of Chicago, Dr Thomas Hubbard of Toledo, Dr Richardson of Washington and Dr MacCuen Smith of Philadelphia work with the organizations in their respective cities, Dr T H Halstead of Syracuse, N Y, has established a lip-reading clinic, while the interest of the late Dr Clarence Blake in the Speech-Reader's Guild of Boston, and the present cooperation of Dr D H Walker with the Guild are well known

In towns where these organization for the deafened exist, the otologists welcome them because they can send them their patients for lip-reading, advice as to hearing devices, employment and for what they believe is of prime importance, recreation and companionship The chief object of our American Association is to encourage the formation of new organizations This need not be difficult If the otologist will invite a group of deafened people to meet social workers, people of means, and the local teacher of lip-reading, where one is resident, a beginning is easily made If there is no resident teacher of the adult hard of hearing, such a group can procure one, either through influencing the local school board or by applying to one of the schools giving normal training Schools of lip-reading, such as the Nitchie School in New York, the Bruhn School in Boston and the Kinzie School in Philadelphia, are constantly sending out their normal graduates to establish new schools These teachers are glad to settle where such inducements as the cooperation of otologists and a nucleus of pupils are held out to them The association stands ready to help each new organization with information, advice and printed matter, and it can arrange to send speakers to address organization meetings

We invite this section to make full and constant use of us, we invite its members to visit our exhibit at the home of the Speech-Reader's Guild, and we ask nothing better, as reconstructed deafened people, than to work shoulder to shoulder with the otologists for the social betterment of all who are adventitiously deafened toward the goal set before us by James Kerr Love of Glasgow the prevention of deafness

3 One children s court in Philadelphia has an attending otologist who says that of the children brought in for delinquency perhaps 10 per cent are not delinquent, but hard of hearing

ABSTRACT OF DISCUSSION

ON PAPERS OF DR. HAYS AND MISS PECK

DR WENDELL C PHILLIPS New York The Association of the Hard of Hearing is one of the finest organizations in this country A series of panels is to be sent around the country for missionary work in the building up of organizations of this kind I cannot tell you what a relief it has been to me to have at my hand a social center to which I can send my deaf patients, where they will be cared for and encouraged — rehabilitated faith-restored, and self-directed Experience with it has made me a missionary to the cause of having the work extended to all parts of the country It is a sad travesty to be compelled to say to a patient, "Your hearing is gone and nothing can be done" when you know that a new life may be opened up for these people I am in sympathy with every word Dr Hays said We ought to go into the public schools in all our cities and begin there the work for the prevention of deafness Much can be done and little is being done in any of the schools I hope you will think seriously of this because we owe this duty to the deaf children and to the community If you will write to the headquarters of the national organization we will send you literature to show how the work is accomplished Then you can start a campaign of this kind in your own city in order to carry to the afflicted ones there this gospel of hope for the deaf

DR FRANCIS P EMERSON Boston It is in the recent cases that our success lies almost wholly In chronic cases we all have had difficulties It is in the handling of these cases that I differ with Dr Hays as to what takes place In chronic cases I believe two processes are going on First the gross tissue changes with diminished tone perception which takes place with the onset of the deafness and which goes on throughout the course of the disease If you analyze several hundred hearing tests you will find that they all conform to about the same formula There is diminished tone perception for the whispered voice and raising of the lower limits in the recent cases In those cases in which a pocket tube is used as the tube opens, tone perception of the low limits becomes normal, but if that case is going on to complete deafness, tone perception of the upper limits, which is roughly indicated in its lower part by the whispered voice continues to be lost. My final judgment is that it is the loss of this tone perception which is important, because until the patient becomes very deaf the low limits are not again raised Just before the low limits are raised you may get evidence that there is some involvement of the cochlear nerve This is indicated by tone gaps and by diminished perception for the 2048 C⁴ fork more often than for any other This finding was confirmed by Dr Dean in the use of his audiometer With the raising of the limits and lowering of bone conduction we all recognize that there is nerve involvement but by the time you can recognize nerve involvement by a metallic instrument the process has gone on indefinitely The second point on which I differ with the essayist is that I think the origin of this trouble is in a chronic focus with acute exacerbations and not in a reinfection Taking a careful history of these patients, you find that the process which has started and is going on throughout life is manifested in other ways whereby you can account for general systemic conditions besides loss of tone perception

DR CULLEN F WELTY San Francisco About fifteen years ago I dwelt especially on the indications for acute mastoid operation saying at that time that if we allowed a case of acute suppuration to go along for more than a certain period the hearing was more than likely to be impaired Following mastoid operation in these acute cases two thirds of the patients are improved in hearing Why allow them to go

along and have further impairment of hearing? Another thing for us to determine is when to operate for adenoids and diseased tonsils I say, at the first onset of any trouble Do not wait for a second or third attack In regard to otosclerosis, we cannot do anything for it, we do not know much about it, we know that it is hereditary One of the foremost otologists of the world says that these people should not marry, that that is the only way to prevent the condition At the Otological Congress at Budapest twelve years ago I maintained that in case a woman who is impaired in her hearing should become pregnant, she should have a therapeutic abortion In regard to lip reading, I am associated with one of these organizations in San Francisco, and I can only subscribe to what Miss Peck has said regarding the wonderful field this work has opened up for persons who are really deaf or who have had their hearing destroyed entirely

DR T R CHAMBERS, Jersey City, N J If Dr Pynchon of Chicago were alive, he would recommend something which Dr Hays in his paper failed to mention, and that is to teach people how to clean the little baby's nose In the case of children up to 3 years of age who are brought for examination and treatment, you may have all the laboratory appliances you want, but rich and poor alike will neglect your treatment My treatment is based on ideas obtained from Dr Pynchon long before he died, and that is to tell the mother to place some warm boric acid solution in a large basin, and then put the baby's head down in the water The baby cries, lift it up, head down, and the baby will clean its nose better than you can do it with any appliance That has been my treatment for a long time and it has been successful Elaborate treatments fail because they are neglected Dr Phillips brought this subject to my attention a year ago and placed me on a committee of the Hard of Hearing Association in New York I was indifferent at first but since becoming active in this work, I have been instrumental in getting up a fine organization in Jersey City Many times I have been discouraged and about ready to give up, but persons coming one after another, exemplifying what we are doing in the reconstruction of these afflicted ones, inspire the hope that similar agencies may be instituted wherever there are deaf people

DR D J MCDONALD, New York Thirteen years ago I came before the society in regard to constructive work from the economic position of the deaf It required six years' work to bring about in New York City the foundation of a school for the deaf through the help of Dr William H Maxwell We must have cooperation within our own ranks I am now in a movement to raise $150,000 in New York City to enable these people to help themselves If this committee could have subcommittees in every city, we should be able to do effective work by distributing propaganda in the halls of Congress, in the various legislatures and in the different communities So far we have been partly successful in New York, but, as Dr Chambers says, it is hard to get the layman interested However, any man who goes to the school on Twenty-Third Street and sees the work that is being done by Dr G B McAuliffe and others will be glad to go to his legislators in an endeavor to have money appropriated for this work When we consider that in the general educational system of the United States not 0 5 per cent is given toward the education of the deaf, there is no reason why we should not get together here and have a committee appointed that will help these people to help themselves Dr George B McAuliffe was appointed by the board of education to find out about the tone gaps, etc, referred to by Dr Emerson The teachers there could be very much improved, but this association of which Dr Phillips is the head in New York City, is on the right road to secure proper teachers We hope that eventually we shall have three or four hundred men and women in this country who will be trying to help Miss Peck to carry on this most important work

DR HAROLD HAYS, New York The majority of hard of hearing persons can be helped, either by prevention, by school work, or by medical attention, but they cannot be helped by aural treatment at all They must be treated systemically

SOME PERSONAL EXPERIENCES WITH CASES OF MYASTHENIA GRAVIS*

ISADOR H CORIAT, M D
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Although myasthenia gravis is designated either as a disease of the muscles or belonging to the endocrinopathies as a thymic disorder, yet its clinical position and nosology are very uncertain On the one hand, particularly in the mild cases, the fatigue symptoms show a strong analogy to psychoneurotic fatigue, with the exception that in myasthenia gravis the fatigue is improved by rest and, on the other hand, more recent investigations seem to point that it may be an endocrine disorder or disturbance in the vegetative nervous system Symptoms of myasthenia gravis are occasionally encountered in hyperthyroidism or exophthalmic goiter, and these symptoms have been known to improve after thyroidectomy or antithyroid therapy

The disease is rather rare, although personal observations have shown that there may be mild forms of the disorder which are frequently confused with the psychoneuroses, particularly if fatigue be a prominent symptom In 1878, Erb separated the disease from the progressive bulbar palsies of organic nature, and later Oppenheim,[1] in 1887, definitely described the disorder under the term of myasthenic paralysis or bulbar paralysis without anatomic findings In 1891, Jolly first called attention to the characteristic electrical reactions occurring in the muscles, the so-called myasthenic reaction, although, as will be shown later, these electrical reactions are open to certain modifications and to new interpretations

From the standpoint of medical history, although Oppenheim seems to have overlooked the fact in his monograph, it is interesting to note that a clear description of the disease was given by the English physician Thomas Willis,[2] in 1685, under the title of "Palsey" The rapid muscular fatigue and the bulbar disturbances of speech were described by Willis in a vivid and picturesque manner

It is my purpose in this contribution to give some personal experiences with myasthenia gravis It seems that it would be more valuable, instead of relating the medical histories in detail or in summary, to give a condensation of personal impressions, a sort of a clinical Galton photograph

I have been particularly fortunate in having been able to observe and study eighteen cases of the disorder Out of the eighteen cases ten were male and eight female The age of onset among the male cases varied from 15 years, the youngest, to 62 years, the oldest, seven of these cases showing the first symptoms bfeore the age of 35 Among the female cases the ages varied from 16 to 49 years, practically the same as for the male cases with the exception of one case in which the first symptom manifested itself at the age of 62 This corresponds fairly closely with Oppenheim's observation that, "as a rule, young persons are affected, but there are exceptions"

The racial predilection is interesting Ten of the cases were Russian-Jewish, four Irish-American, two

* Read before the Section on Nervous and Mental Diseases at the Seventy Second Annual Session of the American Medical Association Boston June 1921

1 Oppenheim H Die Myasthenische Paralyse 1901
2 Willis, Thomas The London Practise of Physick, 1685 pp 431 432

American, and one each in Dutch and Italian subjects Why over 50 per cent of the cases should have occurred in individuals of Russian Jewish origin it is impossible to state, until more is known of the exact etiology of the disease

SYMPTOMS

The mode of onset, or rather the first symptoms of the disease were variable and may be thus summarized

Severe general fatigue and thickness of speech, difficulty in chewing food and swallowing (bulbar symptoms), five cases
Severe general fatigue with cardiac symptoms (central arrythmia and extrasystoles) one case
Pure bulbar symptoms (difficulty in swallowing and chewing food, thickness of speech) without general fatigue, two cases
Fatigue and diplopia, two cases
Diplopia, ptosis, thickness of speech, difficulty in swallowing, three cases
Excessive fatigue and drowsiness, one case
Localized fatigue in the legs two cases
Severe general fatigue, one case
Diplopia, one case
Double ptosis, one case

Because of these variable symptoms, the patients had first consulted specialists in their respective fields, for the eye symptoms, the opththalmologist, for the bulbar symptoms, the laryngologist, for the localized weakness in the legs, the surgeon, and it was only after further observation that the real nature of the disorder became clear

An analysis of this material revealed certain features of interest The general fatigue was usually rapid in its onset and improved by rest, thus distinguishing it from the false fatigue of the psychoneuroses, such as occurs in hysteria and the anxiety neuroses In myasthenia gravis the fatigue becomes rapidly worse after exertion, particularly in localized muscle groups, such as in swallowing or in speech, whereas in the psychoneuroses, the fatigue is of an emotional nature and bears little or no relation to muscular exertion The pupillary reflexes and the knee jerks were normal in all cases In some instances the knee jerk became greatly diminished or actually disappeared after repeated tapping with the percussion hammer, but the reflex was rapidly restored after a few minutes' rest, thus corresponding to the rapid exhaustion and subsequent rapid restoration of muscular contractability on faradic stimulation In a few cases also, an exhaustion of the pupillary reflexes could be demonstrated on frequent illumination of the retina

Hyperthyroidism was not noticed in any of the pure cases of myasthenia gravis, although its possibility was taken into consideration, particularly because of the theory advanced by Chvostek that hyperfunction of the thyroid gland may produce the disorder Muscular weakness and myasthenic symptoms are facts of common clinical experience in hyperthyroidism and exophthalmic goiter, the symptoms disappearing after thyroidectomy or after the administration of a thyroid antitoxin

In none of these cases could any disturbances of the sensation be demonstrated, although Buzzard found sensory disturbances in his series of seven cases in one of which there was a diminution of cutaneous sensibility of the root distribution type

The onset in all cases was rather slow and occasionally without known cause In some of the cases, however, it followed tonsillitis, influenza, severe gastrointestinal disturbances with diarrhea or an emotional shock One case appeared after a lobar pneumonia and one absolutely typical case followed shortly after a severe influenza This patient died subsequently from respiratory paralysis In this instance, whether the influenza was a direct cause or merely a precipitating factor in a myasthenia which was already latent it is impossible to state One patient had been an auctioneer for several years, and in this case the first symptom took the form of dysarthria, probably arising on the speech mechanism already fatigued through this strenuous occupation

In those cases in which a Wassermann test was made, the reaction was always negative No thymus enlargement could be demonstrated by the roentgen ray in any instance In most cases the family history was negative, except an occasional tendency to tics or psychoneuroses There were no mental symptoms in any of the patients except the usual reactive anxious depression Two cases showed a doubtful Babinski reflex In two cases also, hiccup was present for a time a symptom which can be explained only on the basis of a myasthenic localization in the diaphragm

As it is also the object of this contribution to direct attention to the milder and practically undescribed forms of the disorder, certain points of importance will be emphasized, since the fatigue symptoms alone bear a certain resemblance to the fatigue of the psychoneuroses There are, however, several characteristics of the mild type which clearly differentiate the condition from the psychoneurotic exhaustion, particularly the developmental data of the clinical history, the nature of the fatigue itself and its relation to rest and finally the electrical reactions These mild types of the disease may be transitory or prolonged, but all the cases seem to progress to recovery and differ from the severer types in the absence of the characteristic facies, although slight ocular and bulbar symptoms may be in evidence after exertion

The most prominent symptom of these mild types of myasthenia gravis is the phenomenon of exhaustion, both from the subjective standpoint and from the actual demonstration of abnormal fatigue through the electrical reactions and the reflexes All the patients complained of a constant sense of severe fatigue, which became rapidly worse on exertion and rather slowly improved by rest, thus differentiating it from the emotional fatigue of hysteria or neurasthenia which bears little or no relation to rest or exertion Nor did the fatigue have the usual apprehensive anxiety of neurasthenic and hysterical states, but seemed to be actually localized in the muscles, particularly in the lower extremities Experiments on the electrical reactions of the muscles of hysterics and neurasthenics complaining of severe fatigue showed a complete absence of the characteristic myasthenic reaction

In the more severe cases the bulbar symptoms of the difficulty in swallowing and the dysarthria after a few minutes' conversation also belongs to the same category of exhaustibility of the peripheral apparatus of speech and swallowing In one case the drawing speech was the first symptom of the disorder, in another the rapid fatigue of the leg muscles in walking up stairs In a third case that of a barber, the initial fatigue was localized in the fingers resembling an occupational neurosis, causing him frequently to drop a razor or comb during the course of his work In fact it seems that strong myasthenic symptoms in the

so-called occupational neuroses may be the forerunners of a myasthenia gravis

REACTIONS TO FARADISM AND GALVANISM

In all the cases, the typical myasthenic reaction to the faradic current was present, and the rapidity with which the complete exhaustion of the muscular contractions could be induced bore a direct relation to the subjective sense of fatigue In other words, parallel with the improvement, the number of contractions of the faradic current or the length of time of application of a tetanizing current tended to diminish with improvement It seems also that a tetanizing current produces a more rapid muscular exhaustion than the usual make-and-break test The exhausted muscles rapidly recovered their irritability to faradism after a few minutes' rest The fact also that the muscles showed a normal quick reaction to galvanism and without polar inversion, and that a muscle completely exhausted by faradism still reacted to the galvanic current of the same strength in milliamperes as before the faradic exhaustion, leads to the same interesting generalizations on the localization and theory of the disease The characteristic reaction in myasthenia gravis is obtained by faradism, whereas in muscular atrophies produced by a lower motor neuron disease it is obtained by galvanism

Even after the muscles have been completely exhausted by faradism, they still respond normally to galvanism, with a normal formula and quick, sharp contractions and always with the same amount of current as before the faradic exhaustion No muscular atrophy or fibrillary twitchings could be demonstrated in any of the cases Where bulbar symptoms were prominent or where a ptosis appeared, the facial group of muscles showed the best myasthenic reaction If the fatigue was localized in the legs, the thigh muscles were selected for the test, whereas, if the fatigue is a general one without characteristic local symptoms, almost any group of muscles will show the typical myasthenic reaction

As the case improves clinically, the number of contractions or the length of time necessary to produce muscular exhaustion by the faradic current gradually bcomes less, until it finally disappears altogether Some very interesting curves could be plotted in some of our cases showing the parellelism between clinical improvement and the diminution of myasthenic exhaustion of the electrical current

The course of the disease is rather slow, the mild cases seeming actually to recover It is an open question, however, whether a genuine recovery ever takes place in the severe cases In one patient, there was a remission of over ten years, when the myasthenic symptoms reappeared without any apparently known cause

TREATMENT

Although treatment as a rule is rather unsatisfactory, yet personal experience has shown that the best treatment of the disease is symptomatic and consists of absolute rest, both general rest for the general fatigue and localized rest for certain groups of muscles, for the more definite local symptoms If bulbar symptoms appear, producing dysarthria, the patient is forbidden to talk for a certain length of time, if there is dysphagia, the deglutition reflexes must be given as much rest as possible In the latter instances only fluid or semisolid food should be allowed, in order to minimize the energy used up in chewing, and the swallowing muscles should be allowed an interval of from one to three minutes to elapse after each mouthful of food or swallowing of liquid This plan is usually very satisfactory, as experiments on both voluntary contraction of the muscles and the reaction of the muscles to the faradic current demonstrate a rapid recovery from the myasthenic fatigue under these conditions In fact, the data derived from the periodic examinations of the myasthenic reaction will often furnish valuable hints in the treatment and feeding of the patient

Although recent investigations have tended to establish the fact that the disease may be of the nature of an endocrine disorder, yet it is doubtful whether ductless glandular extracts are of any value As starchy foods are not well digested because of insufficient mastication and mixture with saliva, either the patient should be directed to keep food in his mouth as long as possible, or, what is better, one of the starch digesting ferments should be administered or mixed directly with the food In all cases it is absolutely essential that the state of nutrition be carefully maintained

The central nervous system in this disease shows no characteristic lesions and, basing our conclusions on the nature of the myasthenic electrical reactions, the disorder is probably some type of a toxic degenerative myositis The characteristic electrical reaction of myasthenia gravis, either of the severe or of the milder types, is obtained by faradism and not by galvanism, whereas in the muscular atrophies following peripheral nerve degeneration or from lesions of the first motor neuron, the characteristic electrical change is obtained by galvanism The myasthenic reaction strongly resembles the reaction obtained by both veratrin and protoveratrin, and the fatigue curve in myasthenia gravis is analogous to that of muscle preparations poisoned by these alkaloids [3] In some of our cases in which it was possible to carry out the test, it was found that after complete exhaustion by faradism the muscles still reacted to the galvanic current This seemed to point to the localization of the exhaustion to the motor end-organs rather than to the muscle fibers themselves In this disease also the creatinin excretion is less than normal, and this points to the fact that myasthenia gravis may be a disorder of deranged muscular metabolism A marked increase of the calcium output is also found, and since calcium plays an important part in normal muscular action, the good results obtained by the calcium salts in some of the mild forms of this disease may thus be in part explained

CONCLUSION

It seems extremely doubtful whether the disease is a pure neurosis, in spite of the negative anatomic findings in the central nervous system, although certain neurotic and emotional features can be distinguished in nearly all cases which are carefully observed Future investigations of the disease must be directed along several lines, such as the vegetative nervous system, which probably regulates muscular metabolism, toxic causes, for the reason that many cases seem to follow infectious disorders, endocrine disturbances and, finally, an examination of the unconscious psychic states

3 Walker A D Brain 1900 Meyer and Gottlieb Pharmacology, p 426

ABSTRACT OF DISCUSSION

DR W F SCHALLER, San Francisco Were blood pressure observations made in this group of cases? This might throw some light on suprarenal deficiency as a possible etiologic factor I have a patient under observation at present in whom blood pressure readings were repeatedly made and found normal

DR WALTER TIMME, New York I should like to substantiate the fact regarding the racial factor I have seen only three cases of undoubted myasthenia gravis in the last two years, and the patients were Jews over the age of 45 Their metabolic rates were all minus, varying from 10 to 17 Blood sugar was low in all, the lowest being 60 mm to 100 c c. blood The blood pressure varied, but there were no departures from the normal in two In the third case the blood pressure was over 200 systolic All showed typical myasthenic reactions This test should be done very carefully, 150 interruptions a minute of the faradic current in order to exhaust the affected muscle within two minutes In all three cases there was a focus of infection, in the first case carious teeth in the second a secondary sinus infection, in the third we could not determine the source of infection for a long time until an acute mastoiditis developed six months afterward and operation revealed evidence of an old chronic mastoid infection which had never been diagnosed After operation the blood pressure rapidly fell, until now the systolic pressure is from 130 to 140 The myasthenia remains the infectious process in the mastoid is still present, though slight In the case with carious teeth there was little improvement after the extraction of the teeth, but in the third, the patient made a remarkable recovery

DR. G H HOXIE, Kansas City, Mo Were there evidences of leukemia? The literature contains cases under the diagnosis of leukemia which other writers have regarded as cases of myasthenia gravis

DR. ISADOR H CORIAT, Boston The discussion has emphasized that we know nothing of the origin or nature of myasthenia gravis It is true that some of my cases followed infection but the more I study this curious disease the less I feel I know about it

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JEJUNOSTOMY

A TREATMENT OF ACUTE ILEUS AND A PREVENTIVE OF POSTOPERATIVE ILEUS *

A. I. McKINNON, M.D.
LINCOLN, NEB.

The problem that confronts the surgeon in every case of obstruction of the bowels is emptying the intestinal canal When free drainage is once established, the patient's urgent symptoms are relieved, and for the time being his case is changed from an almost hopeless surgical risk to a comparatively good one The cause of the obstruction or the subsequent intoxication is not a matter of immediate concern Emptying the intestinal canal for the present practically restores the patient to a normal condition In short, drainage is the definite objective

The advocacy of enterostomy for drainage is not new, being not infrequently employed following an operation for the relief of the obstruction The surgeon opens the bowel not because he feels sure it will keep the patient alive, but from custom He has no well-founded reason for the procedure He has in mind no particular part of the bowel to open He generally selects a point near the obstruction, where the bowel is most distended, and hence most paretic This explains the fact that so few enterostomies drain successfully In addition to still further decrease the chance for successful drainage, the operation is generally performed under ether narcosis It is common knowledge that ether inhibits peristalsis

Some years ago, I read an abstract from an article by some foreign author on gastrostomy in postoperative peritonitis with ileus He reported a few cases with recoveries I inferred that the gastrostomy was performed to drain the stomach as it was filled from the intestines and to eliminate the depressing defects of vomiting Jan 21, 1916, I saw a case of obstruction of the bowels of seventy-two hours' duration I felt that an operation under a general anesthetic to relieve the obstruction and drain the intestine would be fatal I, therefore, decided to perform a gastrostomy under local anesthesia as a temporary expedient, and if it were successful, a curative operation could be performed later On opening the abdomen, I found neither stomach, transverse colon nor omentum visible or easily palpable for the reason that these organs had been displaced upward by the extreme distention of the intestine I was in a quandary I decided that inasmuch as I could not drain the stomach I would drain the intestine near the stomach I picked up a loop of the jejunum near its origin put in a purse-string suture, punctured the intestine, introduced a small drainage tube, anchored the tube with a retaining suture, then another purse-string suture and dropped the intestine into the abdominal cavity

The tube began to drain liquid intestinal contents and gas immediately Large quantities poured out intermittently The patient was soon able to take a deep breath and after a few deep inspirations expressed herself as feeling all right In a few minutes the clinical picture had changed as if by magic Her convalescence was uninterrupted, the bowels moved naturally within thirty-six hours after the operation The tube dropped out on the fifth day and there was absolutely no leakage afterward The patient left the hospital on the seventh day (The obstruction, evidently, was due to a volvulus)

To the best of my knowledge, this is the first case on record in which a tube was introduced into the upper end of the jejunum to relieve obstruction of the bowels

Shortly after this, I saw another case of acute obstruction of the bowels with extreme distention I performed the same operation, that is, I put a tube into the jejunum under local anesthesia The result was as dramatic as in the first case After a few inspirations the patient remarked that she was feeling all right She improved steadily and took nourishment freely however nothing passed through the rectum After five or six days, she was again taken to the operating room and given a general anesthetic The abdomen was opened and a Meckel's diverticulum was found with a fibrous band attached to the mesentery Through this loop, several coils of the intestine had become incarcerated, causing complete obstruction The diverticulum was removed, and the patient made a complete and prompt recovery I have used this method of relieving intestinal obstruction in a large series of cases with marked success, and the mortality has been reduced almost to zero

I have become firmly convinced that the poor results of the operation for ileus are due to the use of general

* Read before the Section on Surgery General and Abdominal at the Seventy Second Annual Session of the American Medical Association Boston June 1921

anesthesia and faulty drainage. Undoubtedly, too much emphasis has been laid on the pathology of obstruction and not enough on the physiology of peristalsis and the mechanics of drainage.

From my experience and from clinical observation, it is my belief that the chief factors causing death in intestinal obstruction are of a mechanical nature and incident on the abdominal distention. This distention leads to a displacement of the abdominal viscera, crowding the diaphragm and subdiaphragmatic viscera virtually into the thorax, thus diminishing the capacity of the lungs to such an extent that asphyxiation ensues, with its accompanying symptoms of rapid shallow respiration, rapid pulse, leaky skin, cyanosis, etc.

A properly performed jejunostomy will drain the intestinal canal, reduce intra-abdominal tension, improve respiration—all this, with a surprising suddenness.

This dramatic change from a condition of imminent dissolution to one of comparative well-being in a few minutes would not occur if the symptoms were due to toxic absorption.

TECHNIC

The use of a local anesthetic is imperative for obvious reasons. (It does not inhibit peristalsis nor add to the patient's toxic condition.) A short incision is made through the upper left rectus muscle, beginning at the margin of the ribs. Next, the upper end of the jejunum is located. This is the vital, likewise the most difficult, part of the operation. The ungloved index finger is introduced and the bifurcation of the abdominal aorta is located. Normally, the jejunum is within an inch above it, to the left. It may be pushed up several inches. The right side is palpated for the root of the mesentery at the upper border, and by sweeping the finger from the aorta to the left, the beginning of the jejunum will be found. A pair of intestinal forceps is introduced and a loop of the bowel is delivered.

Next a purse-string suture is inserted, the bowel is opened, a drainage tube is inserted 2 or 3 inches, with the point away from the stomach. A retaining suture is put in and the purse-string suture is tied. Another purse-string suture is inserted three fourths of an inch from the tube, invaginated and tied, then the bowel is returned to the abdominal cavity. The bowel should not be sutured to the abdominal wall.

COMMENT

There are other conditions besides acute obstruction in which jejunostomy has proved to be a life-saving operation, for instance, in perforated ulcer of the stomach, in general, suppurative peritonitis, in perforations and resections of the bowel.

To a jejunostomy performed at the completion of the operation to forestall a possible ileus, I have given the name complemental jejunostomy.

It has been my observation in complemental jejunostomy that for the first twenty-four hours the drainage is slight, consisting of a few ounces of bile-stained mucus. After this period, drainage is profuse. When normal peristalsis is restored tube drainage ceases. One of the most striking results is the absence of postoperative pain and discomfort, as repeatedly expressed by patients who have formerly undergone abdominal operations. Invariably they will tell you that during their convalescence from former operations they suffered from gas pains. The question has often been asked, Does leakage of the bowel follow the removal of the tube? The answer is, that there is a cone of intestine projecting into its lumen. When the tube drops out, this acts on the principle of a safety ink bottle, thus preventing drainage.

In acute obstruction of the bowel, a high jejunostomy will drain the intestine immediately and continuously, as long as peristalsis is active and reversed. The abdomen should be opened under local anesthesia. Even in cases that are seemingly hopeless, and in which drainage is not free after jejunostomy, I found that washing out the stomach and the introduction of coffee, whisky, etc., through the tube sometimes stimulates peristalsis, and drainage soon becomes profuse and continuous.

A jejunostomy performed following a serious abdominal operation (a complemental jejunostomy) practically does away with postoperative vomiting. It eliminates gas pains and it always prevents postoperative ileus. It is valuable in desperate cases.

ABSTRACT OF DISCUSSION

DR. ANGUS McLEAN, Detroit: I have had a good deal of experience with ileus. In many of these cases at the time of operation one is in doubt whether or not stasis will occur. When you are skeptical about that, inject a few ounces of castor oil into the intestine, use a hollow needle and put a purse string suture around. I have had several cases of so called postoperative ileus or obstruction coming on two or three days later. The condition is usually preceded by distention and vomiting. The stomach should be washed out early. If the patient does not respond, you must make an opening into the intestine. Under no consideration use a general anesthetic of any kind, not even nitrous oxid gas. You can do this very well under local anesthesia and sometimes you can do it without using an anesthetic of any kind. Simply open the abdomen by taking out a few stitches. You may go too high so that secretions leave too soon. It is hard to nourish these people by mouth if the opening is too high up. You can puncture a dilated portion in the vicinity of the wound that may not reach it, but that will empty out the portion, in three or four hours that upper portion will crowd down and you can do that again. I have seen as many as four openings, and eventually the contents of the upper canal come through and the patient will be relieved. I know of nothing in surgery so beneficial as puncture of the intestine at the proper place when there is distention and a postoperative ileus, an obstruction. This obstruction is due to twisting or paralysis. I have seen dozens of them, after puncture where in two or three days the canal is restored, the bowels will move and secretions will go in the correct channel. You have a distended loop, puncture, it collapses, and I have seen some of these fistulas heal themselves, nothing further is necessary to be done.

DR. ARTEMAS I. MacKINNON, Lincoln, Neb.: The reason for emphasizing the necessity of a high opening in the jejunum is illustrated by the case of a young man taken sick at midnight following a hearty meal before going to bed. I saw him almost seventy-two hours after onset of the obstruction. His condition was bad. I did the usual operation under a local anesthetic and brought out a loop of bowel, which I took to be the upper end of the jejunum, put in a tube and dropped the intestine back into the abdomen. It drained only a few ounces. I decided that I had not drained the upper end. I introduced my finger, and on palpating between spine and kidney, I found the beginning of the jejunum and delivered a loop and put in a tube. The drainage was profuse and continuous. In a short time he was able to take a deep breath, and after a few inspirations he felt all right. That case was very valuable. If I had stopped with my first puncture the chances are it would not have done him any good. I have not had any trouble with

leakage following the removal of the tube Drainage lasts only as long as peristalsis is reversed, when normal peristalsis is established, there is practically no drainage through the tube In complemental jejunostomy, for the first twenty-four hours, there is practically no drainage following an abdominal operation under ether This explains in part why our operations for obstructions were not successful when we did them under a general anesthetic During the second and third twenty-four hour periods drainage is profuse, after this it is less and with normal peristalsis there is practically no drainage through the tube

WHOLE BLOOD TRANSFUSION AND CITRATED BLOOD TRANSFUSION

POSSIBLE DIFFERENTIATION OF CASES*

BERTRAM M BERNHEIM M D
BALTIMORE

The time has arrived, it seems to me, to compare the methods of blood transfusion of recent development, with a view to determining whether, as has so often happened in other fields of endeavor, the pendulum has not swung too far in favor of the latest discovery The necessity for this comparison is, perhaps, not so apparent to those who are familiar with the transfusion of blood only by the citrate method, as it is to those of us who have seen the procedure develop from the terribly difficult direct artery-to-vein major operation affair through the various simpler, indirect methods of giving whole blood, until finally the noncoagulative blood came into vogue, nor are the former in position to make the comparison

SIMPLICITY OF CITRATE TRANSFUSION

It should be well understood that whole blood transfusions were only discarded because of the tremendously simplified technic of the citrate transfusion There was never the slightest criticism concerning the efficacy of whole blood It answered every purpose and was most satisfactory, once it was transfused The only trouble was transfusing it—and that was such a technically trying and elaborate affair that the transfusion field was limited to a comparatively small group of specially trained operators

It was because of this difficulty that the citrate method, whereby blood could be rendered uncoagulable by the addition of comparatively small amounts of sodium citrate and in this state kept for hours and injected into patients at will, was received with acclaim throughout the medical world Nor would I decry this acclaim I, myself, long a devotee of the whole blood method, took part in the deserved enthusiasm that followed the Agote-Lewisohn discovery for I had long before become convinced that if the procedure of transfusing blood was to become popular and be of general service some such method needed to be evolved I promptly adopted it, in company with most all other students of this subject I carried out quite a series of citrate transfusions and became so convinced of the efficacy and simplicity of the method, and the possibility of its wide usefulness that in June, 1917, I read a paper before this Association advocating its general adoption During the war I watched with interest the generalized use of this method of blood transfusion, being firmly convinced of the correctness of that attitude of the Army authorities whereby all other methods for the time being were excluded from use Nor have I cause for changing fundamentally that early opinion The greatest good for the greatest number will come from the use of sodium citrate transfusion, it is undoubtedly the method of election for most men and for most cases

UNFORTUNATE SEQUELAE

But we must not be blind to the fact that the sodium citrate blood transfusion possesses certain obscure, but none the less inherent, features that are not only embarrassing to the physician but most uncomfortable and even dangerous to the patient Apparently there are a certain few patients, a small proportion of the total perhaps, but none the less definitely a certain few, that should not be subjected to this form of transfusion, for in the light of our more mature experience it is utterly ridiculous to pretend any longer that the reactions that follow the giving of citrated blood are harmless and susceptible of being ignored Chills and fever and profound shock have never helped any one and to ignore the danger of these sequelae, merely to note their occurrence without vouchsafing a careful consideration of their eventualities, is little more than admitting a mind closed to certain embarrassing features connected with the procedure

Still this is the attitude we have maintained, our enthusiasm for the method having rather obscured our better judgment It is true that we did take notice of these sequelae from the start, but it was felt that increasing familiarity with the method would eliminate its evils Alas, vain hopes! The dread reactions still persist and persist despite the most painstaking efforts to discover their cause or origin, despite the most careful mixing of citrate with blood, despite the most carefully planned and executed citrate transfusions carried out by men whose long experience with general blood transfusion would preclude the possibility of technical error Some thought that if the sodium citrate were freshly made, there would be no reaction following the transfusion, but that turned out to be a false hope The use of freshly distilled water in making up the citrate solution was then advocated as a preventive, but that failed to make any material difference Then warming the blood was tried, together with a host of other minor measures, but so far as I am aware the difficulty has not been overcome

Worst of all, we are not even in position to tell just when a reaction will occur and when one will not I sometimes think that if it were possible to predict to be able to say that in a given case the conditions are such that no reaction need be feared, our minds might be a great deal easier in the use of this method We are not in this position and the chances are that we never will be, since we are more and more inclining to believe that the reaction is due solely to the action of the sodium citrate itself The phenomenon of the occurrence of the reaction in one case and not in another probably will be found to resolve itself into a question of drug toxicity, an idiosyncrasy such as is shown toward many other drugs

I have tried the various preventive measures advocated without avail Knowing that the citrate is eliminated through the kidneys, on several occasions I have tried allowing the citrated blood to pass into the veins of the recipient in the slowest possible manner once consuming an hour for 500 c c of blood, hoping

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that elimination would occur during the course of the blood inflow But my patients suffered the reaction just the same, so I gave that up

More men are doing transfusions now than ever before, and since many of them have had little experience and consequently can boast of only a minimum of skill in the work, the percentage of reactions is actually increasing At first, we were rather inclined to the belief that the phenomenon was harmless It was unfortunate and distressing both to the patient and the doctor, but little attention was paid to it—it appeared to be but a passing phase All patients seemed to recover from it and the reaction over, citrated blood seemed to possess the same beneficent action and power as whole blood So we assuaged our doubts at first Then there occurred a case that did not get over the reaction, and it was not so very long before a similar one transpired and since then there have been others Yet until this moment no warning has been sounded, though the number of deaths has been considerable Our apathetic attitude on this question of citrate transfusion reaction is not unlike our attitude toward the blood-matching tests in the early days of blood transfusion development Then every one felt that it was nice to match up the blood of donors and recipients prior to transfusion, but by no means essential or necessary—merely a refinement, nothing more I was in this delightful state of mind myself I had done a number of transfusions, ten or fifteen, quite successfully and with excellent results and without a thought of matching bloods, when lo! tragedy ensued I had a death and the most distressingly sad death It is true that the case was an emergency, a grave one, and there would have been no time for tests even had I wished to make them But I would not have had them made if there had been hours and days of time for with my successes I was convinced that they were but a superfluous refinement! What a terrible awakening! The most frightful case of hemoglobinuria resulted, from incompatible bloods, of course, and, in spite of every effort to stave off the inevitable, the inevitable occurred!

Even so, the true significance of this disaster dawned on me slowly, and it was not until some time later that I became convinced of the absolute necessity for blood tests preliminary to all blood transfusions Private investigation brought forth the confession on the part of others of accidents similar to mine—and for the same blind reason Just how many deaths did occur before every one became convinced of the prime necessity of blood tests no one will ever know, but there must have been a number That there were not a great, great many is due solely to the fact that blood transfusions were rather rare occurrences in those days, owing to the inherent difficulties in performing the then fashionable direct transfusion

So I maintain that this reaction following the citrate transfusion, with its inherent danger and the failure of medical men to take cognizance of its importance, is analogous to the story of our erstwhile indifference to blood tests and I am trying to sound a warning Deaths following reactions from citrate transfusion cannot longer be considered as accidental and unrelated to the reaction, nor can they be regarded as due to blood incompatibilities when competent laboratory workers have ruled out this factor by tests, not only before transfusion, but by control tests afterward Furthermore, it is unscientific and stubborn to take the stand that reactions are merely troublesome perfectly innocuous and therefore of no consequence I have had two deaths from this method of transfusion, and I have personal knowledge of about four additional unreported deaths, not to mention numerous other miraculous escapes from death, and I feel quite sure that the experience of many others has been not unlike my own Indeed, one encounters hints to this effect in various articles that occur in the literature

Since it is impossible to say what the exact cause of the reaction is, and impossible to eliminate it as a factor in citrate transfusion, the next best safeguard is to attempt to differentiate those cases that can safely be trusted to withstand the citrate reaction, should one occur, from those which under no circumstances should be exposed to this risk We know now that in from 20 to 40 per cent of the citrate transfusions a reaction of varying intensity will occur, while in the ordinary whole blood transfusion reactions may be expected in hardly more than 5 per cent of the cases If, then, we can determine with some degree of certainty which are the cases that cannot stand transfusion by the citrate method, we will have made a step in advance

TYPES OF CASE UNSUITED FOR CITRATED BLOOD

According to my experience, there are apparently two types of case which should not be given the citrated blood

1 That in which there has been a hemorrhage of such intensity that the extreme limits of bleeding have been reached, and the patient is in such a state of shock that everything in the nature of additional shock must at all hazards be avoided

2 Those states of anemia either primary or secondary, in which the blood depletion has progressed to such limits that the patient is almost dead

Not many months ago, early one morning I was aroused from a deep sleep and asked if anything could be done to save a man who had been given 500 c c of citrated blood four hours previously, and who was apparently dying from the reaction that had occurred The case was one of the most profound exsanguination from bleeding of a duodenal ulcer The man was conscious at the time of transfusion, but in the most critical state imaginable He had had a frightful chill following the giving of the blood in spite of the fact that most careful preliminary tests by competent special laboratory workers had been made The temperature rose to 105 F, the pulse became imperceptible, and he died from shock That is an example of the first type of case which I have cited as unfit for transfusion with citrated blood Those who are familiar with extreme exsanguination, and the profound degree of relaxation of all bodily functions that accompanies it, which we call shock, will at once recognize the common sense in my statement that every means possible should be taken to avoid any additional shock And since it is well known that whole blood gives rise to a reaction in but the smallest possible percentage of cases it can readily be recognized that this is the method of selection in such instances

Two striking cases almost parallel with each other brought me to the foregoing conviction, and these cases are illustrative of the second type of case in which citrated blood ought not be given The first was an elderly woman who was having air-hunger, as a result of prolonged and exsanguinating bleeding from a

uterine fibroid We took time to make the usual tests and then, in my ignorance, I gave her a citrate transfusion She had a profound chill and died three hours later The second was a younger woman who was so weak from prolonged and exsanguinating uterine bleeding of unknown origin that she was unable to talk above a whisper The first case was vivid in my memory, and by that time I had begun to formulate my ideas of differentiation—so, fearing disaster from a possible reaction, I gave that girl a whole blood transfusion She had no reaction whatever, and immediately took on renewed life Two days later, feeling that she could stand the shock of a reaction and wishing to test out my incipient theory, I gave her the same amount of blood by the citrate method She had a reaction, a most violent one, but as I had surmised she was able to withstand it, and came through Her recovery was slow but uneventful

In certain of the primary anemias, especially when the blood picture is profoundly low, it is best at least to begin with whole blood Several years ago, I was asked to perform a transfusion on a woman suffering from pernicious anemia whose condition was extremely critical I had given citrated blood to others suffering from the same disease, and equally ill and anemic, with fortunate results, so I gave this patient the same type of transfusion But she died She had a reaction, and not such a terrible one at that, but she was evidently on the border line and was simply pushed over This was the case which first aroused my doubts as to the suitability of citrated blood for all types of patients I looked up the records of my other cases and found, curiously enough, that those most profoundly ill had failed to have a reaction at the first transfusion, which probably explained the lack of fatalities in this group I remember even thinking that perhaps those most depleted of blood might possibly be secure against the reaction Such was my ignorance But though this death rather impressed me, I still remained unconvinced, probably, I realize now, because I was unwilling to admit the possibility of a citrate reaction death The other physicians in the case rather believed that the patient was dying anyhow, and past saving, thus bolstering up my unwillingness Thus do we permit our conscience to be salved and our judgment warped!

While I was in France, there occurred in Baltimore two deaths following citrate transfusions in circumstances almost exactly similar to those just mentioned As a result two widely known and well recognized physicians had come to the conclusion, independently of each other, that citrate transfusions were dangerous and that if possible they would have no more of them performed on their patients! On my return, however, being unaware of this stand, I performed a citrate transfusion on a patient of one of these men, Dr Julius Friedenwald, and when the patient suffered a most violent reaction from which he nearly succumbed, I received a gentle, but none the less firm, admonition Three subsequent transfusions of whole blood on the same patient were totally devoid of untoward after-effects, and he made a good recovery The tests in each instance were made by the same laboratory man

I do not mean to say that every patient of this type that has a reaction will die! On the contrary, I believe the majority of them will recover But there is a chance that the occasional one will succumb, and since the occurrence of the reaction cannot be foretold, it is this occasional patient that we should endeavor to save by giving the whole blood There are refinements of differentiation in medicine and surgery, and it is high time we were introducing them into this field of work The master of surgery at the Mayo Clinic possesses a higher degree of skill, he has a more refined technic than his brother surgeon of less experience and opportunity and his results show it The art of surgery finds its highest development in a Halsted or a Finney He uses the finest ligatures in tying vessels, he handles tissues with the utmost delicacy, he takes, for example, the most extreme pains in handling an appendix stump Another surgeon is perhaps a more rapid operator, he is less considerate of tissues, he ties vessels more or less *en masse,* feeling that it is unnecessary to take the time required to separate out each vessel and ligate it individually His results are good and he is quite satisfied But he achieves a poor result a bit oftener than the master, and he loses that occasional case which perhaps is saved by the master's refinements of technic

CONCLUSIONS

It will not do to pass this matter over lightly, we are entrusted with human lives, and it is little enough to ask that we assume the burden with serious thought We may expect that in from 20 to 40 per cent of all citrate transfusions, a reaction of greater or less severity will occur In this state of uncertainty, let us attempt to sift those cases which would seem to run a fatal risk if a reaction occurred and give them the benefit of the more refined whole blood transfusion in which the percentage of reactions is hardly so much as 5 per cent I have mentioned two great groups of cases in which citrated blood is unsuited, but as time goes on and more attention is paid to this matter, still further differentiation will probably be made I would not have you think for one moment that this is an attempt to belittle the value of the citrate transfusion No one realizes better than I how much that has meant to the medical profession and to humanity at large But it is necessary to recognize the fact that there are definite limitations to this method of giving blood and that failure to observe these limitations has caused unnecessary loss of life

It is most unfortunate that the giving of whole blood necessitates a far higher degree of skill than does the giving of citrated blood It requires great and constant practice, a real knowledge of surgical technic Therefore, it seems that this method of transfusion must always remain in the hands of surgeons There should be in every community, at least one man who is competent to carry out the whole blood method, and physicians should learn to differentiate their cases so that they may take advantage of this man's skill, and give to their charges that chance for life for which they come to him

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ABSTRACT OF DISCUSSION

DR HARRY G SLOAN Cleveland People needing transfusion are usually classed in the handicapped group We feel that if we add any factor to the transfusion which is damaging to the patient we have discounted the benefit that we wish to confer on the patient receiving blood Blood hemolysis is one of the principal dangers in transfusion This can be avoided by the proper grouping and selection of cases The selection of the technic in transferring the blood is a very important point Next to direct blood vessel suture, which transfers the blood into the patient s veins in the least

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Dr Beth Vincent Boston
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HENRY DWIGHT CHAPIN M D
President of Hospital Social Service Association of New York
NEW YORK

Hospital social service should find both its best inspiration and highest development in the case of the child The compelling necessities of the young in sickness or distress and their usual reaction to the hospital are cogent reasons why the latter should afford only a temporary place of refuge This, however, should form a vantage ground for careful study and efforts at permanent relief

In the case of children, many attacks of illness are due to individual and social causes that can and should be remedied When the child leaves the hospital, we must be prepared to utilize all possible home and community resources in preventing relapses or in completing cures Our efforts must be integrated with all existing helpful agencies From the hospital to the home, there are, frequently, unforged links in the chain of relief The social problems of childhood have a far-reaching influence, since the needs of the child constitute the surest index of both family and social conditions

While the hospital may be a house of refuge for the treatment of certain diseases when home conditions are not favorable, the stay of a child here should be as short as possible Children, and especially infants, do not respond well to prolonged hospital care As soon as acute symptoms of disease have passed, they should be discharged Otherwise, there is liable to be a recurrence of the original disease or, since this is a most susceptible period, a development of one of the many forms of communicable disease or varieties of cross infection In the case of infants a low wasting often takes place without any objective symptoms, frequently ending in hypostatic pneumonia In older children, homesickness and general restlessness may seriously interfere with a favorable course of the disease In order to insure speedy convalescence, the child should be carefully guarded from auto-infection and hetero-infection while in hospital, and discharged as early as possible

TREATMENT AT HOME

After many years of observation within and without the hospital, I believe that a great number of cases of illness in young children can be treated better at home, if proper nursing is procurable A comparison of the results of home and hospital treatment in such a common and widespread disease of early life as pneumonia, will tend to throw light on this subject

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There is no distinction made between lobar pneumonia and bronchopneumonia in these figures It is only fair to observe that many mild cases of pneumonia are successfully treated at home, while the severer types and those doing badly are often sent to the hospital, which may partially explain the wide difference between the mortality of home and hospital

A glance at the results (Table 2) of home care of diarrhea and enteritis during these years, by the same visiting nurses, may likewise be instructive

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I believe that in work among sick infants and little children, the hospital feature can be reduced to a small unit, and more emphasis placed on home care We must not overlook the educational value to the home of

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changed condition, but which is a painstaking operation, the method of choice is the transfer of whole blood by means of a paraffined glass tube We have recently been using this technic more and more in transfusions Dr Raffl, of the house staff of Lakeside Hospital, has recently gone over the cases for two years, which number 436, and has found reactions in 5 per cent We classify as a reaction following transfusion any rise in temperature above 1 degree C As for the ease with which blood is transfused by means of paraffined glass tubes, we no longer think of this as a real surgical procedure In fact, the house staff does all the transfusions There is no technical difficulty in carrying the blood from one room to another Practically all the transfusions are done in the ward or in the patient's room If further surgical intervention is necessary patients are removed to the operating room More and more we are using transfusions in the treatment of patients whose diminished blood volume handicaps their oxidation processes not only in cases of acute shock, but also in cases of pyogenic or tuberculous infection In this way, they receive a temporary boost until such time as they can overcome the effect of their infection by their own resources

DR BETH VINCENT Boston Various causes of reactions have been considered such as the introduction of a foreign protein early coagulative changes in the blood during transfusion and hemolysis of the red corpuscle varying from that of such slight degree as to be undetected by ordinary clinical methods to gross hemolysis giving rise to hemoglobinuria Sodium citrate is said to promote reactions because it increases the fragility of the red cell The individual susceptibility of the patient is an important factor This varies with the individual and the disease Some patients are very resistant, in others the degree of susceptibility is just as striking This susceptibility is especially marked in diseases which show active hemolytic changes such as advanced malignancy, septic conditions with hemolytic manifestations, and the blood diseases of which pernicious anemia is the best example Clinically, reactions appear in three forms Possibly they are different degrees of the same reaction The first is a mild form manifested by chills and fever, usually brief and comparatively harmless The second form is more severe and may lead to a fatal result This is the hemolytic reaction which sometimes comes after the introduction of incompatible blood There is restlessness, flushing of the face dyspnea and precordial pressure, nausea and vomiting or slight convulsions The patient often complains of intense pain in the back These are the early signs of a reaction and they are a signal to stop the transfusion no matter how urgent the case Thirty or 50 cubic centimeters of this blood may cause a profound reaction and 500 c c has caused a fatal result After the transfusion there may be chills, fever jaundice, hemoglobinuria vomiting, diarrhea and even dilirium and coma A fatal result may ensue but the patient usually recovers within twenty-four hours unless too much blood has been given The third form of reaction is very rare, fortunately because at present we are unable to guard against it This reaction sometimes occurs in cases of pernicious anemia in which repeated transfusions have been performed, and it may occur after the introduction of compatible blood or, at least, blood which has been proved compatible by all the tests now available As yet, no adequate explanation has been given for this type of reaction, but it would seem that repeated transfusions may sensitize a patient with pernicious anemia so that a reaction will follow the introduction of any kind of blood

DR RICHARD LEWISOHN, New York I agree with Dr Bernheim that it is impossible to predict when the chills will occur following transfusion, and that these chills are a serious complication following transfusion No method of blood transfusion is free from chills The syringe method has 5 per cent and the citrate method has about 20 per cent of cases with chills Ravdin and Glenn recently reported 138 citrates and forty-seven Kimpton transfusions The percentage of chills was the same with both methods They report one death following the Kimpton and one death following the citrate transfusion I have repeatedly seen that in the same person citrate transfusion did not cause any chills whereas subsequent transfusion of noncitrated blood caused chills, and vice versa The present popularity of transfusion depends entirely on the citrate method All other methods require especially trained staffs It therefore must be our object, not to abolish this method or restrict its use but to prevent the chills The sodium citrate is not the cause of these chills Neuhof has given from 6 to 8 gm sodium citrate intravenously to stop hemorrhage in more than 100 cases without any chills In the citrate transfusion we never use more than 2 5 gm for one single transfusion It has been stated that small clots might form with the citrate method and that they may be the cause of these reactions, but clots form with any method I have started a series of experiments to determine whether chilling of the blood during its transfer from donor to recipient may have something to do with the occurrence of the chills In my observation of about 500 transfusions of citrated blood, I have never seen any serious accident, when proper indications for transfusion were followed The simplicity of the technic is likely to bring about a laxity of indications Without careful indications transfusion of blood will not retain the popularity which it has acquired during the last six years

DR ARTHUR C KIMPTON, Boston In 1912 and 1913, Mr Brown and I originated the so-called Kimpton-Brown tube I have never seen any reason for modifying it or changing my technic, except in not cutting down on the donors I have performed more than 500 transfusions by that means I have had two deaths The patients had been tested out by every known means That does not mean that tests are of no avail Why transfuse patients by a method the reader himself condemns? These patients are transfused because they are usually moribund Why add a method that may possibly harm them further? What does citrate do to the blood? It destroys the platelets That is one reason you want to transfuse to give more platelets If citrate destroys any part of the blood, why use it? Why use it when there is something better? If Dr Lewisohn or Dr Bernheim were to be transfused I believe they would select whole blood The Kimpton-Brown method is difficult as a war method I believe many men transfused with citrate on the other side would be alive today if they had been given whole blood Many are alive because they were given citrate. I rarely see a reaction I rarely cut down on a donor's vein I have had difficulties in doing some transfusions, but I do not believe that will occur with the paraffin tube more often than with citrate

DR J SHELTON HORSLEY, Richmond Va I lost a patient from the citrate method of transfusion, when the blood had been properly matched I believe that in transfusion, as in other operative procedures, if we will stay as close as possible to the physiologic normal the results will be better Sodium citrate is a foreign substance in the blood The Kimpton-Brown method utilizes the whole blood without citrate but when whole blood is not contained within vascular endothelium, it undergoes certain changes, even before clotting occurs The direct method of introducing blood from the artery of the donor into the vein of the patient is ideal For the last year I have gone back to direct transfusion and have done this about twenty-five times in succession without the slightest reaction I use the tube devised by Dr Bernheim One half of the tube is placed in the radial artery of the donor and the other half in the vein of the patient The donor walks to the patient's room and reclines in a Morris chair while the transfusion goes on

DR BERTRAM M BERNHEIM, Baltimore Conditions are such that no one is able to have Dr Kimpton or Dr Lewisohn do [illegible] were in Boston and wanted a transfusion [illegible] if I were in New York [illegible] have Dr Lewisohn do it but the fellow out in the [illegible] the larger communities where men skilled in transfusion are to be found, would be out of luck if not for this citrate method I have tried to take an unbiased attitude It was at my suggestion that the Surgical Department of the American Expeditionary Forces gave over the entire subject of blood transfusion to the Medical Department and it was furthermore at my suggestion that the

percentage of [illegible] he made a good [illegible] were totally devoid of

citrate method was the only one used in France It was so simple that it was possible to instruct a hundred men to use this method, while only one was being instructed to use the whole blood method And while there may have been wounded men who might have been saved equally as well by salt solution as by citrated blood, I saw practically none actually injured, as Dr Kimpton guessed, by the giving of citrated blood Most of them were tremendously benefited by this blood, and many were actually saved But after all it is the greatest good for the greatest number, and that is the way I feel about the use of citrated blood throughout the length and breadth of this country, indeed, throughout the world For the practitioner in a small community, with no one skilled in the giving of whole blood—for it does require a great deal of skill and rapidity of operation to use this method—the citrated method is certainly the one of election But when you have refinements that go with hospitals, and some one capable of giving whole blood, it is only reasonable to use this method in those cases in which the condition from which the patient is suffering is such that he should not be submitted to the unavoidable danger that accompanies the use of citrated blood

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NEW YORK

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In the case of children, many attacks of illness are due to individual and social causes that can and should be remedied When the child leaves the hospital, we must be prepared to utilize all possible home and community resources in preventing relapses or in completing cures Our efforts must be integrated with all existing helpful agencies From the hospital to the home, there are, frequently, unforged links in the chain of relief The social problems of childhood have a far-reaching influence, since the needs of the child constitute the surest index of both family and social conditions

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such service, as the mother can learn much as to the future care and nursing of her family from these visits In this way, it is possible to raise the whole standard of their living If every infants' or children's hospital would thus reduce its inside work to a comparatively small unit, retaining its full medical and nursing staff to operate largely in the homes that supply the hospital, the best and most far-reaching results would be obtained, with the least expense This would really constitute an enlarged and intensive form of hospital social service The small inside service could be utilized for surgical operations, for severe illness requiring specialized nursing, and for scientific study of obscure cases demanding much laboratory service In the few cases requiring hospital care, the stay would be short, as the corps of physicians and nurses would be available for speedy follow-up work after discharge In this way, all possible benefits could be obtained from the hospital, without the disadvantages and dangers so often seen in the case of children These efforts could be accomplished by an enlargement and a reorganization of the social service departments already in existence

HOSPITAL SOCIAL SERVICE

The hospital could and should act as the health center of the neighborhood To attain its widest usefulness, it should serve as a sort of social laboratory in which disease and distress might be traced to their ultimate sources Only thus can relief be made permanent and the recurrence of disease be prevented This is preeminently true in the case of children The child has always offered the best approach to a study of both medical and social problems

It may be of interest to note that the broader conception of hospital usefulness, now known under the name of hospital social service, had its beginning in connection with children Dr Richardson states that the Children's Hospital of San Francisco started outpatient work about 1886, and early saw the folly of giving people medicine without knowing their living conditions So they appointed one of their nurses to visit the home to give instruction in cooking and hygiene, and to supply extra diets when they were needed The physicians acted as advisers to this nurse, and interested friends to contribute for individual cases There were, however, no special records kept other than the financial bookkeeping demanded

In 1890, I started a movement in connection with the children's division of the New York Post-Graduate Hospital, in an effort to make more permanent the work of this division of the hospital Visitors were sent to the homes after discharge, to give relief when needed and to discover and report any faulty home conditions that might be remedied The reason for this work lay in the fact that many children were coming back after an interval of time with a recurrence of the original disease or some other malady For three years, we depended on two voluntary visitors, but they were women with special training and experience in social case-work A history card was used in all the cases, so that the records could be studied and compared, but we have never employed the elaborate and complicated blanks now so generally in use In 1894 a paid visitor replaced the voluntary ones, first, a woman physician, and, later, a trained nurse From the first we have aimed to have the endeavors of the visitor expended in three principal directions (1) In trying to make the medical relief given by the hospital to the individual as permanent as possible This may mean immediate material relief in cases of necessity, or instruction in diet and other factors that may be required to further convalescence (2) In finding out, if possible, the underlying cause that produced the particular sickness, so that a recurrence could be prevented (3) In making a broad study of social conditions that make for sickness and disability in the community that is served by the hospital This becomes necessary in order that a general knowledge, in reference to future prevention, may be acquired and constantly kept in mind All essential requirements of modern hospital social service have thus been met from the beginning of this endeavor

It is believed that this work has been of the greatest utility to our children during the thirty-one years that it has been systematically employed Most of the children come from the lower east side of New York, which is probably the most densely populated spot on the globe

A full history of the child's parentage, family and personal condition having already been taken by the examining physician on admittance, a pretty complete record can be placed in the hands of the attending physician for his guidance in managing the case

In line with the idea that one of the ultimate objects of hospital social service is to study the social relations and problems of the individual so as to initiate broad measures of prevention, a number of efforts in this direction were instituted Four intensive group studies have been made to learn the character of the morbidity, and how this is being influenced by social conditions Thus, an effort has been made to get a social diagnosis, as well as to ascertain what individual influences are making for sickness and disability in the community As already noted, the child offers the best chance for such a study because he connects directly with all lines of inquiry—housing, food, parenthood, the wage problem, faulty hygiene in tenement or town, education, and every other factor in community life

The first group study included 1,000 cases, extending from March, 1900, to March, 1902 The times were hard, and the earning capacity of most of the families was very low In 552 families, the income was totally insufficient to maintain a proper standard of living The housing conditions were bad, principally from overcrowding, and 764 dark rooms were noted Most of the parents were ignorant

The next group investigated included 700 families, and the period extended from March, 1903, to March, 1904 Most of the families were living in great poverty As an example, 304 families received a weekly income not exceeding $10, with many of them well under this figure The housing conditions in most of the families were bad[2]

Another group, investigated during a period extending from November, 1914, to November, 1916, included 1 000 cases The earning capacity in most of the families did not show very much improvement over the data furnished thirteen and seventeen years previously There were 557 large families (of more than five members), and 443 small families (of less than five members), on the list An interesting point is that most of the families earning the higher wages were small, while the large families were almost invariably in the

2 Chapin H D Arch Pediat April 1905

low wage class This may be of interest to birth control advocates A marked improvement in the housing conditions was noted This was undoubtedly due to better tenement house laws, both of construction and operation, which were doing away with dark rooms, rear houses, and other evils of past days This forms a good example of how a social movement can improve conditions of life for the individual

The final group study included 900 cases, from April 1, 1919, to April 1, 1921 The first and most marked contrast shown in this group was the great increase in earnings Thus, 289 families earned between $20 and $30 per week, 296, from $30 to $40, and thirty, more than $40 per week There was, however, little if any improvement in the housing conditions since the last study, for well known reasons A majority of the families lived in three and four room homes, and as 389 families numbered six members or more, and 511 had from three to five in the family, the congestion can be appreciated It is also seen that small families preponderated in this group The visiting nurse, Miss Weiss, reports that while the earning capacity has greatly increased over that reported before the war, the cost of living has increased correspondingly, and that, while during the first flush of the fuller pay envelop some extra fineries might be indulged in, it is doubtful whether, in the diet of most of our families, any variety, greater than that noted years ago, is found The increased cost of food and the increased rent do not leave the worker much better off than in previous years, even with the larger earnings In many of the tenement homes, the rent now amounts to $6, $7 or $8 per room, and, in practically all, the rent is at least $5

EFFECTS OF POVERTY AND IGNORANCE

It is always interesting to try to estimate the relative proportion of poverty or ignorance in the causation of disease in certain classes At my request, our visitor recently tried to make an estimate of these factors

In 171 homes, ignorance seemed to be the preponderating factor, and in 159 poverty alone appeared to be the principal cause of illness, while in 117 homes gross ignorance and poverty went hand in hand However, during the two years covered by this study, one could scarcely call poverty the chief cause of overcrowding, since the housing shortage has been pronounced, and, even when unusually high rents were paid, proper homes were found with difficulty

Our studies confirmed the conclusions of others, that poverty works particular hardship among the young, and that sickness is one of its leading manifestations Many of our parents were likewise ill nourished and sickly looking Poverty and sickness too often go hand in hand The Charity Organization Society has found that fully two thirds of the cases of poverty which it is called on to investigate depend, directly or indirectly, on sickness There is a shifting and alternating relationship of cause and effect between them It is interesting to note how this vicious circle works at different ages Thus, while in adult years, sickness is one of the principal causes of poverty, in childhood poverty is one of the principal causes of sickness

While it is not contended that the social studies here noted are absolutely accurate, yet by taking cross sections at intervals of time, we can certainly arrive at helpful conclusions for individual prevention and social effort They will at least serve to confirm and substantiate certain impressions that many have already had in mind

As to causation, these 3,700 cases may be explained along three broad lines—insufficient earnings, bad housing, and ignorance on the part of the parents These were the real underlying causes of these children's sickness This means that the efficiency and earning capacity of many individuals must be increased, that overcrowding and unhygienic housing must somehow be overcome, and that a wide campaign of health education must be carried on in the community served by the hospital If these endeavors are not undertaken, we are simply doing the veriest patchwork, dealing with effects and leaving causes alone This likewise means that much of our good work will be ephemeral

A prolonged study along these and similar lines on the part of physicians and hospitals will eventually disclose the part played by biologic causes requiring individual action, and those induced by social defects and maladjustments, which call for collective effort, if permanent and really constructive results are to be obtained

OPPORTUNITY OF THE PHYSICIAN

The physician can and should become the law giver in social as well as individual ills He, more than any one else, has opportunity to see life as it really is, stripped of illusions, and on the bedrock of truth Certainly he is a surer guide in social affairs than some reformers with crude but well meaning specifics, or hysterical world-betterers who are liable to do more harm than good, in spite of benevolent intentions Too much of the work of the wise consists in correcting the mistakes of the good We must also take into account the evil done by the physical, mental and moral quacks, who fill the air with their shortcuts and specifics

What is most needed is a patient, slow, exhaustive study of individual and social ills that will furnish data to guide the physician, social worker and legislator in inaugurating broad and comprehensive measures of prevention and relief In social medicine lies one of the hopes of the future

In possibilities of service, the hospital can be one of the broadest human institutions In this, as in many other advances, the little child should lead

51 West Fifty-First Street.

ABSTRACT OF DISCUSSION

DR HENRY I BOWDITCH Boston The social side of hospital work is the very vital part of hospitals Get next to the pregnant mother Get next to the mother after the child has come Do not expect the mother to be normal until she has recovered her physical condition and her mental poise If we can make the mother and the father realize what that child is we have done big work, medically, physically and mentally The child must be enlightened and taught the sacredness of truth I have four different groups of parents who are interested in their children Once a month they get together over their tables, going from one place to another They talk of their children and they find out how daily life touches children, how the police department affects them how the schools influence them, how the hospitals—how everything in life touches our children, and we see that it does the right thing

DR FRITZ B TALBOT, Boston I agree, in general, with what Dr Chapin has said and emphasize the principle of the full enlightenment of children, but I disagree with his lack of distinction between a social service worker and a home visiting nurse and I also disagree with his statement

that real social service started in the nineties In 1905 it was recognized that there was a difference between home nursing and social service It was recognized that social service was a specialty which required special training and separate training from the care of children And it was on that basis that Dr Cabot established in the Massachusetts General Hospital social service work and the training of social service workers I believe that that is the first real social service that has been done The great distinction between a visiting nurse and social service worker is that the visiting nurse primarily takes care of the patient, and the social service worker primarily investigates the social conditions that are back of the physical conditions Those two specialties are very separate, and I want to emphasize that a social service worker cannot be a nurse any more than a socially untrained visiting nurse can be a social service worker The specialties are very definite and with definite limitations I believe with Dr Chapin that patients should not be kept in hospitals any longer than is necessary We send them to their homes as early as consistent with their well-being and health Our social worker is the link between our visiting service and the hospital As soon as the patient comes into the hospital, the social service worker investigates the home and gets in touch with some home nursing organization under whose charge the patient will receive good medical home nursing For example, instead of having cases of endocarditis in our wards for many days we find out whether treatment can be carried out in the home and if not, foster homes are selected and the patient is sent out for treatment

DR R S YARROS, Chicago In my opinion the apparent antagonistic attitude of most of the medical profession toward public health service is due to a great extent to the fact that it is a new manifestation in medical practice and is developing so rapidly that physicians who are by nature and training rather conservative are inclined to condemn it without giving it the thorough consideration it deserves Whether they should be nurses instead of social workers or both, is a matter for further consideration But the fact is that all of us who have had long experience among the poor in their homes are absolutely convinced that such service is most needed if we are to do first class medical work —not only curative but preventive The social service person who comes to the home of the patient and acquaints herself with the economic and sociological conditions of the patient is in a far better position to give instructions to the woman during pregnancy, especially if she is a nurse, and help her to prepare for confinement, as well as teach mother and father how best to care for the well child, and in case of illness—especially contagious diseases where quarantine is so essential—she can actually teach them how to accomplish it even under difficult conditions She is practically preparing the parents in home nursing, cleanliness, orderliness, and how best to carry out the physician's orders This phase of service has no doubt come to stay It is a mistake for physicians to fight it There are economic, social and psychologic aspects in treating diseases The physicians have neglected them too long The public is beginning to be suspicious of us Let us take up these phases of work, study them carefully and use them for the healing of the sick as well as for the prevention of disease

DR CHARLES HERRMAN, New York As to the relative value of home and hospital treatment of infants and young children, my experience coincides with that of Dr Chapin I have observed the course of disease in the tenement, in private practice, in a hospital for communicable diseases and in the children's ward of a general hospital There are two great disadvantages in hospital treatment the absence of individual care, which is especially important in infants and the danger of cross infection Even in the best hospitals the latter can only be reduced to a minimum, not eliminated Take the mortality in one of the commoner communicable diseases, measles I have treated consecutively 400 children, almost all under 5 years of age, in their homes, with a mortality of a little over 1 per cent In the best hospitals it is rarely under 10 per cent and often as high as 25 or 30 per cent This is also the case in foundling and other asylums in which not the severe but the average run of cases is encountered In a modern, properly constructed hospital, the expense of treatment is very great It is a question whether the parents should be relieved of the responsibility of home treatment The hospital treatment of infants and young children with communicable diseases should be limited to those who cannot possibly receive adequate treatment at home

DR HENRY DWIGHT CHAPIN, New York I was astounded to hear Dr Talbot say that a social service visitor could not be a nurse That is not my construction at all My conception of a social service visitor is a woman trained as a nurse as a social worker and even as a physician We do not make any such distinction in New York as to whether a social service visitor shall be a nurse or not But the point on which I take issue with Dr Talbot is this In 1890 we started hospital social service It was not home nursing We tried three kinds of service, social visitors, the trained physician and the trained nurse. We have found a trained nurse with a social education the best kind of a visitor From 1890 the work has gone on but it is not simply home nursing We have gone into the home to study and relieve causal conditions and have kept records for our guidance in these efforts Thus, all the essential requirements of hospital social service have been met The literature of April 1905, will show that social service visiting was not started in Boston but in New York.

THE PSYCHIC FACTOR IN EXOPHTHALMIC GOITER *

ISRAEL BRAM M.D
PHILADELPHIA

The constant interrelationship between body and mind has been recognized from time immemorial, as emphasized by the dictum *Mens sana in corpore sano* From the primary psychoses in which the psychic factor is predominant but in which secondary organic changes occur, to such primarily organic conditions as endocardial lesions or carcinoma of the stomach in which there is secondary distress expressed in moodiness, emotionalism, or even suicidal tendencies, many gradations are observed to substantiate the conclusion that the psychic factor plays its role throughout medicine.

In exophthalmic goiter, the observance of the psychic factor is manifestly of vital importance I beg to state parenthetically that in this paper we are not concerned with the so-called "Basedowified" goiter otherwise known as toxic adenoma, i e, that form of hyperthyroidism superimposed upon an old-standing nontoxic goiter We shall here consider true exophthalmic goiter—a condition not necessarily presenting exophthalmos or goiter, a disease the precise etiology of which is as elusive as the fountain of youth an affection the symptomatology of which is as varied as the colors of the rainbow, a syndrome seemingly characterized by more vicious circles than are seen elsewhere in the domain of medicine—in brief, a disease presenting so great a confusion of structural, functional and psychic features for study that the keener the observer, the greater the problems still unsolved

THE PSYCHIC FACTOR IN PATHOGENESIS

The study of the psychology of individuals during intense reaction to the instinct of self-preservation reveals a notable fact During an earthquake, or a

* Read before the Section on Nervous and Mental Diseases at the Seventy Second Annual Session of the American Medical Association Boston June 1921

fire in a large factory in which many are employed, or a massacre, or the wreck of a liner in midocean, on the firing line in battle, or in other situations of imminent danger to life, forty-nine out of fifty persons soon recover physical and mental poise after their experience and are themselves again One of them, however, because of a singular susceptibility, may evince no psychic and endocrine recoil or adjustment to the previous functional balance The trembling, the staring eyes, the cold, clammy skin, the heart hurry, and other features expressing fright, remain, become frozen or chronic, and we are confronted with a case of exophthalmic goiter In but a small percentage of cases does the disease itself present hereditary tendencies, it is the psychopathic makeup or predisposing soil asserting itself in so-called nervousness, sensitiveness, high-strung temperament and the like, that is inherited I find in at least 90 per cent of my patients a clear history of psychopathic predisposition In these persons, the factors concerned with emotionalism, i e, the endocrines and the nervous system, are easily fired into hyperactivity The threshold of nervous and emotional reaction is reduced, this peculiarity as the predisposing factor requires but the torch of an exciting cause in the form of an acute emotional strain of a sexual nature or disappointment in love, intense worriment or anxiety, fright or terror—and the conflagration of exophthalmic goiter is begun

It is thus evident that the neurogenic theory in explanation of the etiology of exophthalmic goiter is attractive As most observers are now convinced that in emotional disturbances the functions of the endocrines, especially the thyroid, suprarenals and pituitary, are also involved, we must conclude that the neurogenic and pluriglandular theories are interdependent, constituting one theory which we might term the *neuro-endocrine* theory

The following instances of exophthalmic goiter taken from my records, each presenting a history of underlying psychopathic makeup, indicate the exciting factor to be acute emotional strain

REPORT OF CASES

CASE 1—Mr E G, married, a merchant, was seated in the back yard of his home one hot afternoon in July, 1910 when by way of a practical joke a friend approaching him from the rear turned the garden hose on him A few weeks following this fright, he noticed that his collars were becoming too tight, though he was strangely losing in weight Soon he complained of nervousness palpitation, insomnia and bulging eyes, and within nine months the syndrome became so severe as to lead to cardiac decompensation and beginning anasarca

CASE 2—Mr S B aged 34, married a salesman, in June 1913 was so affected by the death of his mother that he developed the typical syndrome of exophthalmic goiter within two months

CASE 3—Mr M R, aged 39, married, a merchant, in March, 1920 developed a very virulent form of exophthalmic goiter following extreme worriment over business troubles Either as a coexisting etiologic factor or as a concomitant symptom in the syndrome, this patient's unreasonable sexual desires were bitterly complained of by his wife who confided to me that at the time of his illness he had compromised his good moral standing by sexual relations with several women in his employ

CASE 4—Mr R L, aged 28 bachelor a draftsman, who was referred for treatment in June, 1920, was a man of wholesome morals, but being engaged to be married and keeping company," it seems that the internal conflict between chastity on the one hand and the strong sexual urge on the other was responsible for the syndrome of the *fruste* form of exophthalmic goiter of six months' duration

CASE 5—Mrs M B, aged 42 a housewife, had shortly after her marriage, fourteen years before, developed exophthalmic goiter, which she claimed was the result of intense marital and conjugal incompatibility Her household has been a battlefield of expressed and suppressed hatred Ten years ago a ligation was performed, four years ago, a lobectomy When she was brought to my attention two years ago she presented a very tragic picture of chronic exophthalmic goiter, with large regenerated goiter, marked exophthalmos with edematous eyelids, trembling of the entire body, heart enlarged to the left axillary space and in a state of delirium and mind verging on a major psychosis

CASE 6—Miss L B, aged 26, single, a mill hand referred for treatment in September, 1917 presented exophthalmic goiter in marked form, which developed shortly after the announcement of her engagement in 1915 The history indicates that the intense sexual emotion incident to her engaged life was the exciting factor in the production of the disease

CASE 7—Mrs J T, aged 32 a housewife, whom I first saw in June 1920 presented a very virulent form of the disease of four years duration, without exophthalmos and without goiter The onset began a few days following a fright This was in the nature of a diminutive mouse which ran across the floor while she was alone in the house one night

CASE 8—Mrs S S, aged 21, a housewife, referred for treatment in September 1920 shortly after her marriage one year before I saw her, began to suffer with extreme nervousness which culminated within six months in an outspoken picture of exophthalmic goiter The history, taken in the presence of the husband pointed very strongly to temperamental and sexual incompatibility as the exciting cause

CASE 9—Mr J McK aged 32 married, a typesetter was in 1917 employed in a munitions plant in which an explosion occurred, and though he received no bodily injury, he was so badly scared that he fell to the floor in a faint A few days later symptoms of exophthalmic goiter began to assert themselves and within three months he was a typical subject of the disease When I first saw him nine months ago there was a large pulsating goiter enormous, delirious heart with a rate of approximately 180 trembling of the entire trunk extreme emaciation and all the other evidences conspiring to make this patient a most pitiable sight to behold

CASE 10—Mr J G, aged 47, married a combox collector for a telephone company, was in 1910 a passenger in an elevator which dropped nine floors He was taken home in a state of shock, and within a few weeks developed the complete syndrome of exophthalmic goiter When he was referred to me in February 1921, there was a medium-size vascular goiter moderate exophthalmos extreme tremulousness a very irregular heart with auricular fibrillation emaciation and distressing bladder and intestinal irritability

Time does not permit mention of many other instances of like nature

THE PSYCHIC FACTOR IN SYMPTOMATOLOGY

The mental manifestations in a subject of exophthalmic goiter vary with the nature of the preexisting psychopathic makeup the age sex culture of the individual and the severity and duration of the affection In the average early case, the brilliancy of the eyes is associated with apparent acuteness of thought Cerebration is quickened, speech eager and hasty, attention is concentrated though unsustained, and there is a multiplicity of interests evidenced by the facility and speed with which there is change of subject during conversation Soon the relatives and friends observe a change in the patient s disposition which in some instances may become alarming There is a tendency to the formation of hasty conclusions, irritability, moodiness and a heightening of the emotional response,

so that on the slightest provocation there is uncontrollable laughter, anger or weeping As the syndrome advances in duration and severity, the symptoms are intensified, with occasional remissions Insomnia, which is now distressing, plus the heart hurry, serves to accentuate the psychic manifestations In the event of auricular fibrillation (which may occur a year or longer after the onset of the disease), periods of disorientation alternating with periods of bewilderment, confusion and excitement may occur I have often observed instances of visual hallucinations with persecutary delusions during which the closest relative was regarded as a designing fiend or a murderer The persistence of this status soon stamps the patient as one in whom the major psychosis must receive primary attention Indeed, it is not too much to say that all subjects of unmistakable exophthalmic goiter have approached the arbitrary threshold of insanity and may suddenly step into this category at any time

THE PSYCHIC FACTOR IN TREATMENT

The still prevailing uncertainty in the management of exophthalmic goiter is responsible for the three schools of treatment, represented by the surgeon, the roentgenologist and the internist But though they differ in their respective mode of therapeutic approach, surgeon, roentgenologist and internist fully agree on the importance of psychotherapy as a necessary element in their armamentarium The careful, experienced surgeon does not operate precipitously, but rather gradually, leading his patient on by smiles, a friendly attitude, and suggestive influences, to the point where the scalpel can be employed with the least operative risk Also, he is careful to extend his psychotherapy into the postoperative future in the hope of complete recovery The careful roentgenologist, whether he cooperates with surgeon or internist, or treats the patient alone, likewise knows the value of psychotherapy, and in his own way endeavors by word and manner to cheer and encourage the patient to a healthy mental attitude The internist who has been eminently successful in the management of these patients knows that without skilful psychotherapy as an element permeating and controlling all his instructions, failure is probable, for on mental adjustment depends cooperation in treatment—the vital factor in therapeusis

Since a comprehensive discussion of psychotherapy would involve the consideration of the mental evolution of man himself we must here confine ourselves to a few brief generalizations The purpose of psychotherapy is (1) to inspire a healthy faith in the physician and his art, (2) to effect subjective harmony, i e, to assist the patient to become a healthy self to himself, (3) to establish objective harmony, i e, a harmonious relationship between the patient and his environment—a healthy faith in God and man

The psychotherapist must himself be made of firm mental stuff, a keen student of psychology, a sociologist, possessing a magnetic personality, at once friendly and irresistibly commanding, with a clearly apparent sincerity of purpose Psychotherapy as indicated in patients with exophthalmic goiter is not synonymous with psychoanalysis as popularly conceived The study of the mentality in exopthalmic goiter is a distinct, perhaps an isolated field, requiring a medical attendant possessing a broad experience with these patients In his efforts to discover the mental flaws of his subject, the physician must be able to enter into the patient's moods and win his confidence and admiration in a subtle, almost imperceptible manner, in order to make him feel that at last he has a true friend in his confessor, and that recovery is at hand

The method of procedure in psychotherapy varies with the temperament of the patient, the environment, the culture and the financial status, and his personal peculiarities and idiosyncrasies Conviction, persuasion and suggestion, each in varying dosage according to circumstances, are the instruments employed to reenforce the patient's will, overcome autosuggestion, and establish a state of mental adjustment consistent with intrinsic and extrinsic harmony There is much good in each mental makeup, this good must be ferreted out and employed as a basis for the development of healthy cooperation

Psychotherapy must extend even to relatives and friends, by a process somewhat similar to that directed toward the patient However, when it is found that they are noncooperative, an appropriate institution is advisable for the patient

The doctor must not permit himself to become the permanent instrument of psychic correction, but later he must outline or prescribe other means of mental adjustment, according to circumstances In this category, always with an eye to individualization, is included the vocation of the individual, the social calendar, music, reading, conversation, attendance at lectures, and various other forms of diversion Above all, the patient must be taught ever to keep the corners of his mouth turned upward, if he laughs outwardly, he will soon feel like laughing, and this becoming a habit, the victory is won

CONCLUSION

It appears relevant to remark that the syndrome to which we apply the term exophthalmic goiter is not *goiter,* and the sooner this affection is removed from the classification of *goiter,* the sooner will a rationalization of therapeusis be effected While nontoxic goiter and toxic adenoma are local conditions yielding satisfactorily to thyroidectomy, this cannot be said of exophthalmic goiter, the etiology and especially the symptomatology of which is as widespread as the body itself Every organ and its function, every tissue, indeed, every cell of the patient is involved, and when thyroid swelling exists, it is not the cause of, but incident to or a link in the chain of events constituting the syndrome Hence it is that in patients whose thyroids are not productive of marked pressure symptoms, whose vital organs are not too badly damaged, who are not insane, and in whom satisfactory cooperation is obtainable, the experienced individualizing internist obtains an excellent statistical showing With the removal of any discoverable infectious foci, a properly outlined regimen of rest, diet, drugs and other measures, and a practical psychotherapy pervading the whole, there is effected a correction of physical and mental vicious circles, there is a restoration of emotional and endocrine balance, and this, without added shock, without scars, with almost no recurrences nor mortality rate Such a patient, having been under the guidance of the physician for a year or longer, finally becomes self-supporting, evinces a stronger grasp on life and a healthier con-

ception of its meaning, possesses greater mental stolidity than ever, and is more than ever equipped to face the world "irreproachable and unafraid"

1431 Spruce Street

ABSTRACT OF DISCUSSION

DR TOM A WILLIAMS, Washington D C Dr Crile some years ago made the statement, in reference to cases of mild hyperthyroidism (with exophthalmic goiter or not), that he thought it necessary after thyroidectomy that the patient be sent to a convalescent home in the country for six months if the cure was to be permanent. He then went on to say that such patients made as great an improvement without thyroidectomy as did those who had been operated on For ten years I have been trying to find an instance in which psychic trauma has been the agent, but I have not succeeded Further, I have not considerably benefited hyperthyroidism by psychotherapy, save in a very few instances Therefore, if Dr Bram can so excite the admiration of the patient, he may have solved the issue which I have failed to do He says one must apply the same psychotherapy to the patient's friends as to the patient, but that is even more difficult If Dr Bram has solved that problem, he may have given us the missing link which explains our failure

DR. CHARLES H MAYO Rochester, Minn The points brought out in Dr Bram's paper, that troubles of the central nervous system are responsible for exophthalmic goiter, that the thyroid may or may not be enlarged without being the cause of disease and that special kinds of rest are indicated for the cure of the patient, are of interest from an historical standpoint Much more is known of the thyroid gland now than in the early days Kendall has isolated the thyroid secretion and Plummer and Boothby, from a study of the metabolism, have shown the effect of the lack of the thyroid gland in early life, and the effect of its loss in the adult The effec of hypersecretion is known, as is the amount of secretion consumed by the body each day to maintain a metabolic rate A small percentage of patients with goiter get well with or without treatment and a very large percentage recover from the disease following surgical removal of varying amounts of thyroid tissue The majority of these cases occur in the thirties, but I have seen a number of typical cases between the ages of 4 and 10 years also a few at 60 No single form of medical treatment has yet been accepted by internists, they however, plan many months of treatment, meaning disability and expense to the patient If surgery is to cure, it should be instituted early, when the risk is no greater than that of operation for simple goiter

DR ISRAEL BRAM, Philadelphia I was careful to say "by a process somewhat similar to that directed toward the patient," should psychotherapy be directed to the patient s friends and relatives It is necessary to eliminate the psychic trauma directed toward the patient from other individuals, at least until such time as the patient's psychic condition is rendered more stolid Confidence of the patient in the physician is vital to cooperation Since admiration is a psychologic constituent of confidence, it follows that the former must obtain in the interests of satisfactory mental adjustment of the patient Though we occasionally encounter refractory patients, the large majority of them are susceptible to proper management From observation of a large series of cases of exophthalmic goiter I wish to respond to the remarks made by Dr Mayo that though the mortality in his group is very small it is still very high elsewhere among surgeons But this is not the whole story Many so-called cases of exophthalmic goiter cured by operation are really cases of toxic adenoma—a condition usually remediable by thyroidectomy

The pathogenesis of exophthalmic goiter is a chronic one, often extending back for many years indeed the predisposition is frequently congenital How can we expect to overcome this by surgical means and within a few weeks obtain recovery? In my series of patients I have had 50 per cent who prior to the institution of nonsurgical treatment, had submitted to surgery in one way or another and were either partially or not at all improved, or were markedly worse off than ever Though there is hyperthyroidism in exophthalmic goiter hyperthyroidism is a mere incident in the syndrome, and to attempt thyroidectomy is to endeavor to remove a symptom which will recur as soon as the thyroid is regenerated and then we are frequently confronted with a worse condition than that which existed before the knife was employed

Clinical Notes, Suggestions, and New Instruments

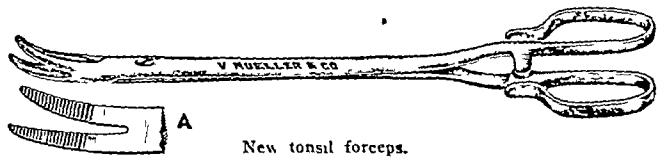
NEW TONSIL FORCEPS

L P WARREN M D WICHITA KS

To those who find dissection and snare the most satisfactory technic for enucleation of tonsils, the following method of using a modification of Sawtell's forceps may be of interest

For the right tonsil the forceps are taken in the right hand with the blades closed, and carried as far to the left as the angle of the patient's mouth will permit until ready to grasp the tonsil The distal or grasping portion of the blades is separated about three-eighths inch, the open blades are pushed deep into the tonsil If the points of the blades when closed seize the so-called capsule of the tonsil, all the better One locks the forceps handles and proceeds

It will be found that the tonsil will evert much more easily because of the deep central parallel fixation of the forceps blades the central portion advancing under traction while the poles are held stationary or are folded backward The



New tonsil forceps.

incision may at will be carried along the pillar borders because with these forceps rotation of the tonsil on its long axis is readily accomplished so that the posterior pillar is easily seen more so than with any other forceps with which I am familiar It holds with great tenacity and gives the operator absolute control of the position of the tonsil

For the left tonsil the introduction is better made with the left hand The accompanying illustration shows the actual size of the grasping portion of the blades

Schweiter Building

A CASE OF ACRODYNIA*

PAUL W EMERSON M D BOSTON

Visiting Physician Boston Floating Hospital Junior Assistant Physician Children s Hospital Assistant in Pediatrics Medical School of Harvard University

L R a boy aged 4½ whose parents were healthy and had two healthy children and whose past history was negative was admitted to the Children s Hospital Boston, Feb 16 1921, showing general weakness loss of knee jerks, and redness and peeling of the finger tips and toes which at first glance seemed on the one hand to be a case of multiple neuritis, and on the other a postscarlatina case I looked up the cases of acrodynia reported by Weston[1] and by Byfield and the case fits in so well with that disease that I believe it is worth reporting

Six weeks before admission he seemed tired, and after playing for half an hour would want to sit down and rest He did not want to eat anything was constipated, and did not sleep well His mother noticed that his hands and feet were

*From the Medical Service of the Children s Hospital

1 Weston William Acrodynia Tr Sec Dis Child A M A 1920 p 83

2 Byfield A H A Polyneuritic Syndrome Resembling Pellagra Acrodynia (?) Seen in Very Young Children Am J Dis Child 20 347 (Nov) 1920

cold He could walk Since the onset he had continued to be constipated and went three days without a movement Itching of the legs and feet troubled him, but this could be relieved by salt water applications He had lost much weight His usual diet was milk, about 1 quart daily, bread and butter, one egg, meat or fish, candy, cake and raw fruit He had had no vegetables The water he drank was obtained from a well with iron piping He had had no medicine and had had no preceding respiratory infection

The patient was apathetic, with marked flabbiness and weakness of the muscles of the legs In rising from a sitting position on the floor he used his hands in a manner suggesting knee-climbing He showed no definite paralysis, but his hand grasps were weak, and there was a slight tremor in the fingers The knee jerks were absent He stood with a marked lordosis, and walked unsteadily

It was difficult to make out any abnormality of sensation, but it was noticed that he did not mind the lumbar puncture at all, and he was not disturbed by the pricking of his skin to obtain blood for a white count The skin was *moist* Over the chest, abdomen and legs was a rash looking much like a heat rash On the finger tips and toes, extending over half of the first joint, was a mild redness, diminishing gradually from the tip backward, on the dorsal surface, together with some peeling A few of the nails showed some ridges near the matrix The second toe of the left foot showed, beside the peeling, a vesicle-like lesion which looked as if it had broken

The rest of the examination was negative The white count was 7,800, the hemoglobin 80 per cent The von Pirquet test was negative The urine had a specific gravity of 1 022, and showed acetone and a few white cells The spinal fluid was clear and came out at the rate of 60 drops a minute It contained 6 cells to the cubic millimeter and reduced Fehling's solution The globulin test, with alcohol gave a + + reaction, and with ammonium sulphate a + reaction

While he was in the hospital he was apathetic, and if he was set up in bed would soon slide down He was seen to go to sleep while sitting up, and fell asleep once while he was eating his dinner His bowels were difficult to move and required a laxative of some sort every night, and an enema the next morning He had no desire for food, but would eat rapidly enough if some one fed him He sweated a good deal The redness in the finger tips and toes varied in degree, but was more marked on the fingers There was no sharp line of demarcation

February 21, he developed lesions looking like paronychia on the tips of the third fingers There was no discharge from them, no tenderness, and they remained the same until he left the hospital

February 23, his upper lip became much swollen, and there appeared on the under side, bordering on the mucocutaneous line, a yellowish lesion, running back 1 inch, irregularly circular, not indurated and not painful

February 24, the white count was 12,800

February 27, the rash on the left hip became confluent and deeper, possibly from friction with the bedclothes

March 7, the urine showed acetone and a few white cells The patient complained all the time of the itching of his feet

March 15, he developed a small yellowish lesion on the tip of his tongue, in the median line, quite similar to the one on his lip but much smaller

The temperature during his stay was between 98 and 100 4, the pulse between 110 and 150, and the respirations were, on the average, 25 His weight on admission was 31½ pounds, it was down to 27⅜, but on March 3 was 29 pounds

His parents requested his discharge and he was allowed to go home He was far from looking wretched and did not burrow in the bedclothes He lost no hair and no teeth, and his gums were normal On discharge his lip had nearly healed, but otherwise he was the same as at entrance

He had no treatment except rest in bed, fresh air, and forced feeding His past history ruled out poisoning with a drug, and no food deficiency could be made out Pellagra was considered, but was manifestly out of the question

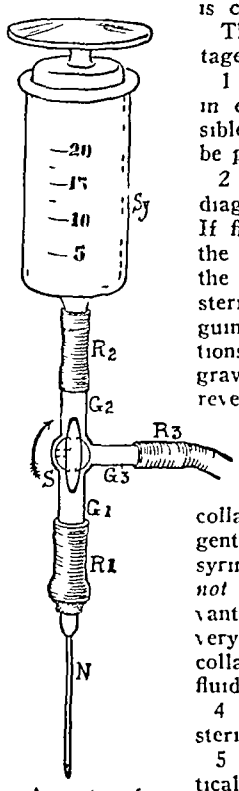
June 17 I received word from his mother that the child had completely recovered

86 Bay State Road

A SIMPLE AND INEXPENSIVE APPARATUS FOR DIAGNOSTIC OR THERAPEUTIC PUNCTURES*

ROGER S MORRIS, M D, CINCINNATI

Exploratory punctures, whether of the pleura, pericardium, joint, lung or liver (abscess, cyst), is a procedure which every clinician has occasion to employ frequently A simple apparatus has been devised for this purpose It consists of a glass T tube (*G 1, G 2, G 3*), with a two-way glass stopcock (*S*) This is connected with a needle (*N*) by heavy rubber tubing (*R 1*) and with a Luer glass syringe (*Sy*) of 20 or 50 c c capacity by means of light rubber tubing (*R 2*), such, for example, as a soft rubber catheter A third piece of rubber tubing (*R 3*) may be added, if desired The tubing is cut in convenient lengths



Apparatus for diagnostic or therapeutic punctures

The apparatus possesses several advantages

1 It is inexpensive All of the parts are in every physician's office, with the possible exception of the glass T, which may be purchased at small cost

2 A single puncture suffices both for diagnostic exploration and for aspiration If fluid is obtained, the syringe is filled, the two-way stopcock is then turned, and the fluid is ejected through tube *G 3* A sterile test tube is filled for culture or for guinea-pig inoculation, and other portions are obtained for determining specific gravity, protein content and cytology By reversing the stopcock and alternately filling and emptying the syringe, aspiration may be continued until the fluid is evacuated

3 The light rubber tubing (*R 2*) collapses when a vacuum is produced by gently drawing on the plunger of the syringe, provided the end of the needle is *not* in the fluid This is an obvious advantage, it serves as a useful guide With very thick pus, however, the tubing may collapse, even though the needle is in the fluid

4 The apparatus is easily cleaned and sterilized

5 It is readily portable, occupying practically no space in the bag—a great advantage over the liter vacuum bottle usually employed Thus, an aspirating outfit may be at hand always, when the physician is making his calls, and if exploration or aspiration is indicated, it may be done without delay

6 The joints are simple, air-tight, and do not become clogged

7 The apparatus is also suitable for intravenous injections

APPARATUS TO AID IN DIFFERENTIATION BETWEEN AN OBSTRUCTION IN THE URINARY OUTLET AND PARALYSIS OF THE BLADDER

GEORGE WALKER, M D BALTIMORE

Inability to void may be due to an obstruction somewhere in the urinary outlet or to muscular weakness of the bladder In not a few instances, patients have come under my care who have undergone an operation for a supposed prostatic obstruction, whereas in reality the condition had been due to a partial paralysis of the bladder muscle In order to aid the diagnosis in these obscure cases and to study the bladder function with more precision, I have devised an instrument, which is represented in the accompanying illustration

DESCRIPTION OF INSTRUMENT

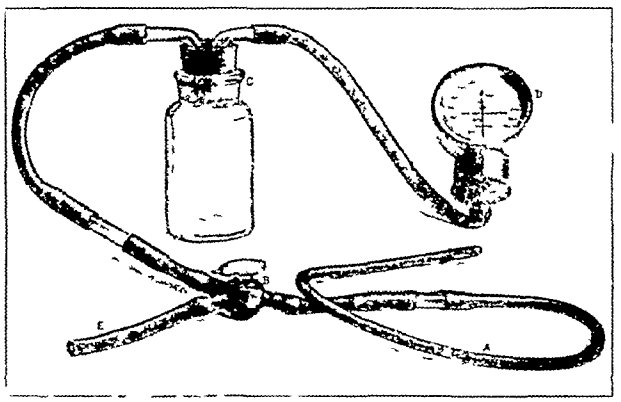
The instrument consists of a catheter (*A*), a two-way cock with three openings (*B*), a wide-mouthed 2-ounce bottle with

* From the Medical Clinic of the Cincinnati General Hospital

rubber cork (*C*), an ordinary blood pressure gage (*D*), and a piece of rubber tubing (*E*) for the purpose of introducing fluid into the bladder or letting it out Connections are made with rubber and glass tubing The stopcock has three openings so that by turning the valve the bladder can be connected alternately with the gage or with the tube. In this way water can be introduced into or taken out of the bladder The empty bottle acts as a buffer and prevents the fluid from going into the gage The whole instrument can be easily constructed, at a very small cost, since the only expensive part the pressure gage, is in the possession of every physician

MODE OF USING

The whole instrument except the pressure gage is sterilized by boiling The catheter is introduced into the bladder and the stopcock turned so as to evacuate any urine which may be present One hundred cubic centimeters of sterile water is then injected into the bladder through the tube and the catheter, a syringe or a graduated gravity bottle being used The valve is then turned so that the pressure in the bladder will be recorded on the gage Another 100 c c is injected and a second reading made in the same manner, and so on until 500 c c has been introduced The patient is now directed to exert his utmost effort to void the fluid This pressure is registered on the gage and is recorded One hundred c c is then evacuated and another reading is taken, and so on until 100 c c remains in the bladder



Apparatus to aid in differentiation between an obstruction in the urinary outlet and paralysis of the bladder

THE NORMAL STATIC AND VOLUNTARY INTRAVESICAL PRESSURE

A series of young and middle aged men with normal bladders was selected and the static and voluntary intravesical pressure taken The accompanying table shows the general average

100 c c	of water	without voluntary effort = 10	mm	of mercury
200 c c	of water	without voluntary effort = 12	mm	of mercury
300 c c	of water	without voluntary effort = 14	mm	of mercury
400 c c	of water	without voluntary effort = 16	mm	of mercury
500 c c	of water	without voluntary effort = 20	mm	of mercury
500 c c	of water	utmost voluntary effort = 120	mm	of mercury
400 c c	of water	utmost voluntary effort = 130	mm	of mercury
300 c c	of water	utmost voluntary effort = 150	mm	of mercury
200 c c	of water	utmost voluntary effort = 110	mm	of mercury
100 c c	of water	utmost voluntary effort = 80	mm	of mercury
50 c c	of water	utmost voluntary effort = 70	mm	of mercury

With this apparatus we are not only able to differentiate between a weakened bladder and an obstruction in the urinary outlet but also to determine the exact capacity of the bladder that is the full relaxing power Our studies have also shown that in the condition commonly known as paralysis of the bladder three distinct pathologic conditions must be taken into account (1) a paralysis of the bladder muscle, (2) a paralysis of the sphincter muscle with no change in the bladder muscle, and (3) a tonic contraction of the sphincter which does not relax sufficiently to allow the patient to void

These observations were made on adults in the recumbent posture, when made with the subjects in the sitting or standing position, the pressure was increased from 15 to 20 points

The experimental work is being continued and will be reported later

Charles and Centre Streets

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION W A PUCKNER, SECRETARY

ARGYN—A colloidal compound of silver oxide and serum albumin containing from 25 to 30 per cent of silver The silver is in a form not readily ionizable

Actions and Uses—See general article Silver Preparations under Silver Protein Preparations, Argyrol Type, New and Nonofficial Remedies, 1921, p 330

Dosage—Argyn is employed in from 10 to 25 per cent "solutions" (colloidal suspensions), or even stronger

Manufactured by the Abbott Laboratories Chicago No U S patent U S trademark No 137522

Argyn occurs as black lustrous hygroscopic granules It readily forms colloidal solutions with water and glycerin but not with oils or with alcohol A solution of argyn 1 1000 is deeply colored

To 1 Cc. of a 2 per cent colloidal solution of argyn add 1 Cc of sodium chloride test solution no precipitate forms (*ionizable silver compounds*) To an acidified colloidal solution of argyn add 1 Cc of ferric chloride test solution a white precipitate is formed and the dark color of the solution is discharged

About 1 Gm of argyn accurately weighed is placed in a 500 Cc Erlenmeyer flask about 20 Cc of strong nitric acid solution is added and the contents heated in the steam bath for one half hour about 200 Cc of water is added and sufficient hydrochloric acid solution to precipitate the silver as silver chloride The silver chloride is collected on a tared Gooch crucible washed well with hot water dried and weighed The silver content corresponds to not less than 25 per cent nor more than 30 per cent of metallic silver

CASEIN—Caseinas—The protein separated from milk by the action of acids or enzymes and purified It contains not less than 15 per cent of nitrogen as calculated on the moisture-free material

Actions and Uses—Casein is used as a food, being added to other ingredients of the diet when it is desired to increase the content of protein in the diet This occurs occasionally in the feeding of infants, in the nutrition of adult convalescents and undernourished persons, and in the dietotherapy of diabetes Casein is readily digested, furnishes phosphorus in addition to the usual amino-acid derivatives of proteins and represents a protein of good nutritional quality Casein is also used in the preparation of special foods for diabetics or others for whom a regimen poor in carbohydrate or fat may be desired

Dosage—The quantities which may be desirable to use vary widely in accord with the purpose of the feeding Hence the dosage cannot be designated in definite terms

Casein is soluble in ammonia water and in aqueous solutions of the fixed alkali hydroxides insoluble in water alcohol ether chloroform or benzene A suspension of casein in water slightly reddens blue litmus paper but casein has both acidic and basic properties.

Char about 2 Gm of casein accurately weighed extract with hot water using 5 successive portions of about 10 Cc each dry the insoluble portion heat it to obtain a white or gray ash (moistening with nitric acid if necessary) add the aqueous extract evaporate the mixture heat the residue and weigh The ash does not exceed 2 per cent of the weight taken

Weigh accurately from 1 to 2 Gm of casein and dry it in an air oven at 100 C to constant weight The loss does not exceed 10 per cent

Add 10 Cc of water to about 1 Gm of casein accurately weighed Mix thoroughly with a glass rod and allow to stand for 15 minutes Transfer to a Rohrig tube or a separator with 10 Cc of ammonia alcohol (1 volume of stronger ammonia water and 4 volumes of alcohol) Mix thoroughly to completely dissolve the casein Add 25 Cc of ether shake thoroughly for half a minute add 25 Cc of petroleum ether and shake again for half a minute Allow to stand for about 20 minutes or until the liquids have separated. Draw off the ether solution as completely as possible filtering through a pledget of cotton into a weighed flask. Repeat the extraction with ether and petroleum ether using 15 Cc of each solvent Evaporate the combined extracts and dry the residue at 100 C to constant weight The residue corresponds to not more than 1 per cent. of the weight taken

Determine the nitrogen in a weighed quantity of casein by the Kjeldahl method The nitrogen corresponds to not less than 15 per cent of the moisture free material

PAPAVERINE SULPHATE-ROCHE (See New and Nonofficial Remedies 1921 p 211)

The following dosage form has been accepted

Papaverine Sulphate Tablets Roche 0 04 Gm

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JULY 23, 1921

WHERE CAN A PERFECT CLIMATE BE FOUND?

Climatotherapy has been defined broadly as the use of climate for checking or preventing the development of disease, and for aiding the recovery of those who are ill or convalescent If, indeed, the meteorologic conditions of a place or locality, if temperature and humidity and diverse other related factors are potent elements in determining the well-being of mankind, the physician has the imperative duty of learning where they are to be found within easiest reach for his patients Hence the query "What constitutes a good climate?" To this a well known climatologist [1] has frankly replied that "perfect" climates do not exist that every climate has some disagreeable features Health resorts are never equally desirable at all seasons Ward regards it probably safe to say that every climate has advantages of its own for some special purpose but some climates have more, and some have fewer, disadvantages

Although scouting the idea of a perfect climate, Ward regards as a pretty general agreement among physicians, physiologists and climatologists that, excepting those who are distinctly ill, the best climate for most persons and most of the time is one that has frequent moderate weather changes, fairly marked annual and diurnal variations in temperature, a reasonable amount of cold during at least part of the year, a refreshing variety in the amount of cloudiness, and sufficient rainfall to provide enough moisture for the growth of grass and crops Such a climate Ward adds, is an intermediate one It is neither invariably hot nor permanently cold It is neither monotonously arid and cloudless, nor always dull and rainy It is between all extremes The climates of much of the so-called "temperate zones" are of this general type Their physiologic effects are intermediate between those of the equatorial and those of the polar zones They exercise the body's power of reaction and adaptation, keeping it physiologically active

The search for a better climate frequently means as every clinician well realizes a change in something more than meteorologic environment It is not the air for the lungs, the temperature for the skin, the altitude for the circulation, or such incidents that alone are sought Social, mental and physical changes occasion their own beneficial or baneful transformations Many of the advantages which rest, recreation, diversion outdoor life, relaxation, altered diet, expert medical attendance and proper hygiene secure under the guise of a "change of climate" could frequently be secured at home with less real hardship to the patient Frequently the home will become a health resort if it can be made a pleasure resort In the case of specific diseases such as tuberculosis we have gradually learned the importance of teaching the patients how to live at home The burden of recovery is no longer shifted solely to the "resort" in a faraway place Have we not neglected all too often the possibility of taking advantage of local climates? Perhaps it will become more popular in the future to seek health at home Then the choice of climate will no longer require "a nerve-racking decision"

1 Ward R D Climate and Health with Special Reference to the United States Sc Month 12 355 (April) 1921

ORGANIZED LABOR AND PREVENTIVE MEDICINE

The right to health" is a privilege which many persons are beginning to regard as one of the inalienable rights attached to citizenship in a great republic Without health there can be no happiness, and all the vaunted advantages of the liberty of a democracy are useless if the individual is unable, owing to physical defect or encroachments of disease, to enjoy what he is taught to esteem as priceless possessions Most persons have acquired the habit of regarding good health as something God-given and fortuitous over which they have no very direct control, or, realizing that health may be jeopardized by environmental conditions or personal neglect, they fall into the attitude of expecting either the state or the employer or some philanthropic organization to provide the safeguards and furnish the remedies which lead to hygienic happiness

No one needs good health in greater abundance than the worker, yet he belongs in most instances to the group of those who are either ignorant of the menaces and the means to avert them, are indifferent to the wasting of human health, or not uncommonly are hoping for some outside help toward solving personal problems Hence many have come to depend on the diverse social agencies, such as enlightened employers may furnish or charitable organizations may provide in the domain of preventive medicine Mrs Grace M Bernheim [1] has struck a new and important keynote in a communication addressed to organized labor She points out that the traditional attitude of the latter has been to look on workingmen's health as "the boss's business" Insisting that this is a serious mistake, she urges that a physical examination should be the worker's first introduction to his union It should be closely

1 Bernheim G M A Health Program for Organized Labor New York Call March 20 1921

tied up with the local and its employment department It should be the foundation on which the whole future of the individual rests Knowing the needs of his body, he can select work for which he is fitted Knowing his weak spots, he can build up his health

If it is not entirely novel, it is at least unusual and unconventional in most trades for the union leaders to accept any degree of responsibility for their followers' health The working hours, the scale of wages, the apprenticeship and many other items have long been solicitously guarded against unfair exploitation on the part of employers Surely the union can afford to make an equal effort or investment in relation to the health of its members, one of its chief working assets There is common sense in Mrs Bernheim's insistence that the worker himself must learn how his body is affected by his work, by his food, by his pleasures Of what use, she asks, are shorter hours, higher wages even being a "great man," if the body is broken and the mind too sick to care? It is a splendid plea for the larger participation of organized labor in the aims of preventive medicine

AN INTERPRETATION OF DEATH

Biologists have pointed out that the longevity of man is in a sense determined not only by the innate constitutional properties of the protoplasm of his living tissues but also by the possible appearance of adverse environmental conditions The latter are to a considerable extent controllable, they can be averted or rendered less frequent by many precautions such as form part of the dictates of modern preventive medicine and personal hygiene By improving the environment of the individual and limiting the likelihood of detrimental forces being brought into play against him it is not unlikely that the average expectation of life may continue to be increased

This possibility rests on the assumption, however, that the inherent capacity of protoplasm to grow and be restored is not self-limited If senescence and death are necessary attributes of living matter, even ideal conditions of existence will sooner or later be without avail Weissmann long ago concluded that originally protoplasm possessed "the property of potential immortality" Expressed otherwise, the living matter was assumed to be capable of reproducing itself indefinitely, if accidents, disease etc, are barred Others have argued that some sort of contribution from other protoplasm, as in copulation or conjugation, is indispensable to the continuity of life The elaborate studies of Woodruff have shown, however, that this is not necessarily the case He[1] has succeeded in maintaining a culture of *Paramecium* through reproduction by mere division of its protoplasm without conjugation for more than thirteen and one-half years during which time more than 8,400 generations were thus attained Hence we may conclude with Woodruff that under a favorable environment the protoplasm of a single cell may be self-sufficient to reproduce itself indefinitely This is essentially an asexual method of development The long continued growth of the tissue cultures maintained by Carrel and his associates at the Rockefeller Institute point to a similar conclusion for certain types of mammalian cells

It will then be asked why natural death is so inevitable in the higher organisms To this question Pearl[2] has found an answer in the complexity of these forms of life—in the differentiation of structure and function in the body It is, to quote Pearl, a complex aggregate of cells and tissues, all mutually dependent on one another and in a delicate state of adjustment and balance If one organ for any accidental reason, whether internal or external, fails to function normally it upsets this delicate balance, and if normal functioning of the part is not restored, death of the whole organism eventually results Protozoa may in a sense be immortal Germ cells are likewise immortal The modern transplantation experiments have demonstrated that certain somatic cells, such as tumors contain, may continue to live and grow indefinitely But by their specialization the higher forms forego the power of independent and indefinitely continued existence This is the price paid for the differentiation of special functions Thus says Pearl, if in such an interlocking and mutually dependent system any one part through accident or in any way whatever gets deviated from its normal functioning, the balance of the whole system is upset If the departure of any part from its normal functional course is great enough to be beyond correction promptly through the normal regulatory powers of the organism, death of the whole will surely ensue

NUTRITIONAL REHABILITATION

The chemist distinguishes between certain changes of state that matter may undergo by designating them reversible and irreversible In these respective cases the product of the reaction can in the one instance, readily be converted back into its precursor form When an irreversible reaction takes place, on the other hand, the resultant substance can no longer be restored to exhibit its earlier properties Thus, a soluble protein undergoes an irreversible reaction when it is converted with the aid of heat into insoluble coagulated protein

Similarly, there are biologic changes in living matter which partake of an irreversible character When they are of a sort that deteriorates the organism, a permanent undesirable effect is produced There are bodily damages that can never be repaired Certain functions may become perverted beyond the possibility of recovery Interferences with growth and normal nutrition

1 Woodruff L L The Present Status of the Long Continued Pedigree Culture of Paramecium Aurelia at Yale University Proc Nat Acad Sc 7 41 (Jan) 1921

2 Pearl R The Biology of Death, IV The Causes of Death Sc Month 12 49 (June) 1921

not infrequently leave evidences of harm in the guise of dwarfed forms and malnourished persons Are these changes likewise irreversible in character?

An affirmative answer has often been given to this question It has been alleged, for example, that when once growth is retarded beyond the period during which it usually takes place, a condition of permanent stunting is likely to ensue In their experiments on laboratory animals, Osborne and Mendel, as well as other workers, have clearly demonstrated, however, that the individual may be stunted by a variety of specific deficiencies in its food, yet subsequently recover when the diet is made adequate More recently, Sherman [1] and his collaborators at Columbia University have attempted to determine whether this favorable outcome is also attainable when the stunting results from the use of an unbalanced dietary of ordinary food, simultaneously deficient in more than one factor, and particularly when the deficiencies are such as may frequently occur in human experience A striking illustration of the positive results observed by them was obtained in the case of diets rich in bread Animals which had been seriously stunted in early life by feeding on bread alone resumed growth at a normal rate and subsequently produced and reared healthy young when a liberal supply of milk was added to the cereal diet This wonderful supplementary value of milk cannot be too often emphasized The modern "nutrition classes" in some of the present day child-health activities bear similar testimony The upshot of these evidences from now diverse sources is that we must not despair of the "nutritional rehabilitation" of individuals or families whose vitality has been reduced by living on unsuitable proportions of staple articles of food For such persons it is rarely too late to thrive when the opportunity is given

1 Sherman H C, Rouse M E Allen B, and Woods E Growth and Reproduction upon Simplified Food Supply I J Biol Chem **46** 503 (May) 1921

Current Comment

BRAIN LECITHIN

When a well known continental physiologist of the last century first made the oft-quoted remark that "our thoughts depend upon the element phosphorus," he doubtless had in mind the peculiar phosphorus-containing nitrogenous compound lecithin, first discovered in egg yolk by Gobley three quarters of a century ago, and soon thereafter reported by him to be present also in brain tissue During the succeeding years lecithin, though ill defined by the chemists and always admitted to possess an uncertain chemical structure, remained as a striking characteristic of the organ on which our thinking, our feeling and, in ultimate analysis, our doing, depend Whether current fashions in nomenclature happened to designate it as a lipoid, a phospholipin, a phosphatid or, perhaps, still differently, the substance originally known as lecithin continued to exercise a sort of mysterious spell in biochemistry When, therefore, about ten years ago Frankel and Linnert [1] denied the presence of lecithin in the brain tissue of man, many who had struggled in student days to memorize the elaborate structural formula of the leading chemical component of the central nervous system experienced the sensation which fruitless labor often evokes Then, too, there were mysterious virtues in lecithin which the medical advertiser detected best of all But the Austrian investigators were wrong Lecithin is present in the brain This assurance is now given by Levene and Rolf,[2] who have isolated and identified it at the Rockefeller Institute for Medical Research Furthermore, the brain lecithin is found to have the same composition as that from egg yolk The distinction between lecithins lies apparently in the differences of the character of their fatty acids The fatty acids isolated from the egg lecithin are oleic, palmitic and stearic acids The same acids were also isolated from the brain lecithin Lecithin and the traditional "brain phosphorus" have been saved to keep the physiologist thinking about their functions

1 Frankel and Linnert Biochem Ztschr **24** 268 1910 **26** 44

2 Levene P A and Rolf Ida P Lecithin IV Lecithin of the Brain J Biol Chem **46** 353 (April) 1921

COST OF MEDICAL EDUCATION AND TUITION FEES

The statement is being made that the cost of obtaining a medical education has so increased in recent years as to make it prohibitive except for the well-to-do The facts do not warrant this statement It is true that the cost of furnishing a medical education has greatly increased, but this has affected tuition fees to only a moderate extent Fifteen or twenty years ago the majority of medical schools were meeting their expenses from students' fees, and some were declaring dividends, now it is considered quite impossible for a medical school to teach modern medicine unless in addition to students' fees, it has a generous income either from state appropriations or from private endowment The actual expenditures for the teaching of medical students by eighty-two medical colleges during 1913-1914 gave an average of $419 a year for each student, as compared with an average of $150 a year for each student paid in tuition fees On the average, therefore, the expenditure was nearly three times what the student paid in fees The tuition fee which each student paid in some medical schools was only one tenth or even less of the money expended for his instruction With the general increase in the cost of maintenance since the World War, tuition fees have been increased, but not at all in comparison with the increased cost of furnishing the education The highest fee now is $350 a year, in 1914 it was $250 There are still, however, about twenty high grade medical schools in which the fees are less than $150, and in ten of these they are less than $100 a year Among the latter are several state university medical schools in which low fees are charged to students living within the state At the same time, greater provision has been made for deserving but needy students than previously in that more than 300 free scholarships and generous loan funds

have been established in about forty of our better medical schools Aside from the higher living expenses, the cost to the student for obtaining a medical education is only slightly higher than it was fifteen years ago

THE DESTRUCTION OF LEUKOCYTES FOLLOWING PROTEIN THERAPY

Marked leukocytosis accompanies a variety of more or less clearly differentiated clinical conditions In addition to the classic leukemias or leukocythemias a number of diseases are known that give rise to somewhat similar blood pictures In view of the obscure etiology of most of these conditions, and particularly of the uncertain significance of the large increments in one or another of the types of white blood cells, a critical student cannot avoid doubt as to the real wisdom of those modes of therapy which lead to a wholesale destruction of the increased numbers of leukocytes The methods used are essentially empirical, yet they have found considerable application in the current management of the leukemic disorders Application of roentgen rays has found vogue, and is justified by the alleged selective action which the rays are said to have for cells of the lymphocytic and myelocytic type During the decade following the demonstration by Selling that benzene is a leukotoxin, this substance has been employed in the treatment of certain forms of leukemia, and the employment of radium has also been suggested Another method of producing a leukopenia or decrease in circulating leukocytes has been described by Gow [1] from the Medical Clinic of St Bartholomew's Hospital in London A rapid diminution in the number of all forms of the white cells in the peripheral circulation is stated to follow the intravenous injection of so-called "peptone," usually a mixture of the products of the peptic digestion of proteins The phenomenon was noted incidentally by earlier investigators, who were unable to account for the disappearance of the leukocytes, for peptone has no leukocytolytic action in vitro This type of leukopenia, which usually is followed by a transient polymorphonuclear leukocytosis, would have little more than academic interest except for the fact that the intravenous injection of peptone has been recommended for several years by the Belgian clinician Nolf in the treatment of septic infections The procedure is admittedly a drastic one, and considerable further study is required of this as well as of many other forms of specific protein therapy

ACIDEMIA AND ALKALEMIA

Although the expression "acidosis" has long been in use, having been coined by Naunyn many years ago, its precise meaning appears of late to have become somewhat confused Originally it was applied to what has sometimes been termed acid intoxication, that is, to conditions in which large amounts of nonoxidized organic acids are formed in metabolism and circulated in the body Beta-oxybutyric acid, aceto-acetic acid (so-called diacetic acid) and lactic acid are illustrations of the types of chemical compounds just referred to One of the consequences of the circulation of such products, that is, of an acidosis in the original sense, may be a lowering of the content of carbonates in the blood This led Van Slyke and Cullen a few years ago to introduce the expression "decreased alkali reserve" to denote this condition It has found wider acceptance with us than abroad Meanwhile, evidence has accumulated to show the existence of conditions of the blood in which the reverse status applies, that is, there may be a relatively high content of carbonate, to which the expression "alkalosis" has fittingly been applied Instances of such possibilities, notably in relation to tetany, have repeatedly been discussed in THE JOURNAL Poulton [1] has recently pointed out anew what many American workers have long regarded as unfortunately confusing namely, that the word acidosis is being employed by investigators and others to signify increased acidity as exemplified in increased hydrogen ion concentration Changes in reaction sufficiently marked to justify reference to such conditions rarely occur in fact, owing to the composition and equilibrium phenomena of the blood whereby the reaction is kept extremely constant According to Poulton, it was proposed at the meeting of the British Medical Association in Cambridge that increased and diminished hydrogen ion concentration should be known as "acidemia" and "alkalemia," respectively, and that diminished and increased alkali reserve should be designated as "acidosis" and "alkalosis," respectively It would be well, in the interest of uniformity as well as accuracy in scientific nomenclature, if English-speaking investigators would adopt this or some other widely acceptable solution whereby confusion will be avoided in the future

SENSORY FACTORS AND TOBACCO SMOKING

The physiologic action of tobacco has long been a subject for acrimonious discussions in which prejudice and propaganda often seriously distort the judgments of the disputants It has taken a long time to unravel fact from fiction in the behavior of alcohol so as, for example to demonstrate conclusively that it almost invariably acts as a depressant rather than as a true stimulant in the body Tobacco is today also a popular theme for scientific and pseudoscientific controversy Many have wondered how the widespread habit of smoking is to be explained and observations by Mendenhall at the Dartmouth Medical School may throw some light on the custom In studying the sensory thresholds of trained persons, both smokers and nonsmokers, to faradic stimulation it was noted that the effect of smoking was conditioned on the state of the sensory mechanism at the time of observation If the person's threshold was at or near normal, smoking was not usually effective in changing it, whereas if his threshold was low indicating high irritability or nervousness smoking often depressed the irritability On the other hand, if the person's sensory mechanism was in a depressed state (with a high sensory threshold) then smoking had a stimulating effect in the sense of

1 Gow A E Certain Effects of Peptone Injections in Septicemia Quart J Med **14** 187 (Jan) 1921

1 Poulton E B Acidosis and Alkalosis Correspondence Brit M J **1** 508 (April 2) 1921

2 Mendenhall W L Effect of Tobacco Smoking on Human Sensory Threshold J Pharmacol & Exper Therap **17** 333 (May) 921

lowering the threshold The depressant effect of smoking was much more marked than was the stimulating tendency Rest accomplished the same sort of restoration of the threshold for sensory stimuli to the normal, though the effect of smoking in this respect seemed to be more marked The psychophysiologic measurements made at Dartmouth harmonize with the statements of those who experience a stimulating action of smoking when they are depressed, and a depressing effect when they feel nervous or irritable Smokers will find in this research a justification for the belief that the use of tobacco under certain conditions may lead to such sensations or feelings as approach the normal most nearly, that is, an adjustment which brings the smoker to a physical state which is desirable because normal in its sensory features Of alcohol it has been said that whereas it may at times be a blessing in disease, in health it is mostly a detriment Perhaps it will eventually appear that the smoking of tobacco also has a variety of effects, the importance of which depends on the state of the smoker quite as much as on the pharmacology of the smoke

PROGRESS IN THE TREATMENT OF LEPROSY

The latest reports [1] of the progress of the investigations which Dean and his medical and chemical confreres in the Hawaiian Islands have been conducting in recent years on the treatment of leprosy deserve careful study The problem, which has frequently been discussed in THE JOURNAL, has involved many disturbing factors complicated by the difficulty of determining with certainty whether leprosy has actually been cured in the individual cases treated There can be little doubt, however, that a potent remedial agent resides in some of the fatty acids which can be separated from chaulmoogra oil The first larger group of successful cases in which the newer discoveries were applied were treated by the use of mixed ethyl esters of chaulmoogra oil acids carrying 2 per cent of iodin in chemical combination Intramuscular injections were supplemented by oral administration of a similar product In the latest series the iodin has been omitted without noteworthy difference in the favorable outcome of the treatment, and the oral dosage has likewise been discontinued because it has failed to give any evidence of added advantage in respect to the period of treatment or the character of the results attained Furthermore, two definite constituents of chaulmoogra oil, chaulmoogric and hydnocarpic acids, have been separated and employed in the form of esters therapeutically with obvious success Thus, the practice of treatment has become simplified to involve the injection of ethyl esters of one or the other of the two chemical compounds noted An opportunity is now offered to the chemist to prepare a variety of similar products for tests of their possible superior value in the important work of curing lepers The "last word" has not been spoken, but a truly great advance has been made in the demonstration of a chemically distinct type of substance with potent remedial properties

1 McDonald J T and Dean A. L The Constituents of Chaulmoogra Oil Effective in Leprosy J A M A 76 1470 (May 28) 1921

Association News

THE ST LOUIS SESSION

Dates Announced for Annual Session in 1922

The next annual session of the American Medical Association will be held in St Louis, May 22 to 26, 1922 The Board of Trustees has appointed Dr Robert E Schlueter St. Louis, Chairman of the Local Committee of Arrangements The committee will establish an office in the headquarters of the St Louis Medical Society, 3525 Pine Street All communications for the attention of the Local Committee of Arrangements should be sent to that address

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES NEW HOSPITALS EDUCATION PUBLIC HEALTH ETC)

CALIFORNIA

Chiropractor Sentenced to Term in Jail—It is reported that on May 26, H A Kitelle, chiropractor of Los Angeles, was sentenced to ninety days in jail on the charge of practicing medicine without a license

GEORGIA

Venereal Institute Clinic—More than 200 physicians of Georgia attended a series of lectures and clinics on venereal disease control at Emory University, Atlanta, July 11-16

ILLINOIS

Personal—Dr Charles E Humiston, Chicago, president of the Illinois State Medical Society, appeared before the House Committee at Washington, D C. on Monday, July 18, in opposition to the Sheppard-Towner bill

Chicago

Personal—Dr Alfred S Burdick has been elected president of the Abbott Laboratories, to fill the vacancy caused by the death of Dr Wallace Calvin Abbott Dr Burdick has been associated with the Abbott Laboratories for more than seventeen years, and for the last six years has been vice president and assistant general manager

INDIANA

Muncie Academy of Medicine—At the last meeting, before adjourning for the hot months, which was a joint meeting with the state board of health, Dr George Crile, Cleveland, spoke on the "Control of Mortality in Abdominal Operations for Cancer"

Public Health Survey—Dr Murray P Horwood, Massachusetts Institute of Technology, is conducing a public health survey of Tippecanoe County during July and August, under the auspices of the Tippecanoe County Tuberculosis Association The purpose of the survey is to ascertain the condition of the factors affecting the public health and to formulate a program for the improvement of the public health, based on the findings of the survey It will include an investigation of the water supply, sewerage and sewage disposal refuse collection and disposal, milk supply, sanitation of food stores and restaurants, school sanitation, school hygiene, organization and activities of the health department, hospital facilities, antituberculosis activities, vital statistics, and analysis of the city budget

KENTUCKY

Typhoid Fever Outbreak.—An outbreak of typhoid fever in Kentucky prompted Surgeon-General Cumming to send Asst Surg M V Ziegler to Louisville to confer with state and city health authorities and to assist in the application of control measures in the epidemic that is spreading in the city of Louisville

MARYLAND

Personal—Dr Maurice C Pincoffs has been appointed professor of medicine and head of the department of medicine in the Medical School of the University of Maryland, to succeed Dr Gordon Wilson This is the first step in the reorganization of the whole medical school, which was made possible recently by members of the medical faculty placing their resignations in the hands of Dr Albert F Woods, president of the university Under the new administration, several of the present staff are expected to be asked to remain Dr Pincoffs is a graduate of the Johns Hopkins Medical School, class of 1912——Dr Ysidro Espinosa, chief medical officer in charge of the child hygiene bureau in the department of health, Mexico, is in Baltimore studying the methods of similar work in operation in this city

MINNESOTA

Personal—Dr William F Wild, Clarkesdale, Miss recently with the Rockefeller Foundation has been appointed executive secretary of the Minnesota Public Health Association, to succeed Dr Hibbert W Hill, who resigned last year

NEW JERSEY

Election of Health Board Officers—At its annual reorganization meeting, July 6 at Trenton, the state board of health elected Dr Harry Spence Jersey City president, and Dr Thomas B Lee, Camden, vice president

NEW YORK

Conference on Public Health—The annual conference of public health officers and public health nurses of New York state will take place, September 13-15, at Cornell University, Ithaca

Personal—Because of failing health, Dr Hortense V Bruce has resigned as superintendent of the New York State Training School for Girls at Hudson, to take effect on August 1

Dinner for Health Department.—The Yonkers department of health held a dinner July 15, to celebrate the first anniversary of the establishment of the department of health During the year Yonkers has had the lowest death rate and the second lowest infant mortality rate among second class cities of the state of New York

The One Hundred and Second Medical Regiment.—At the state camp of instruction, at Peekskill, July 9, Col Lucius A Salisbury, division surgeon for the Twenty-Seventh Division, N G, N Y, was sworn in as colonel of the new One Hundred and Second Medical Regiment, and will take control of all the medical activities of the state guard This regiment is the first to be organized and federalized and will be the model followed by the National Guard of other states

Appeal for Medical Volunteers—In view of the lack of experienced physicians in the Orient capable of conducting postgraduate work, the American Jewish Physicians' Committee has issued an appeal through its president, Nathan Ratnoff, to experienced physicians and surgeons throughout the country to volunteer for medical instruction service in Palestine The courses are planned to assist medical men and medical missionaries working in the East and will be nonsectarian The committee hopes to found a medical college in Palestine as a gift from American Jewish physicians

Health Legislation—Among the new laws and amendments to existing laws relating to public health passed by the last legislature are the following

Chapter 249—Authorizes second and third class cities to create public health departments in place of boards of health and provides for full time health executives who will be known as commissioner of health in second class cities and health officer in third class cities The term of office of such officials is made four years instead of two as at present No person will be eligible to such appointments unless he is a physician or surgeon licensed to practice under the laws of New York State has practiced as such or been engaged in public health work for a period of five years and has complied with the qualifications prescribed by the public health council Exception is made in the case of physicians who have received the degree of doctor of public health in an institution recognized by the University of the State of New York.

Chapter 509—Empowers county boards of supervisors to establish a general health district which may include the county or any part of the county or parts thereof except that no first or second class city and without its consent, no third class city may be included in such district The act makes provision for the continuance of present existing local health districts and for the completion of the term of office of present local health officers

Chapter 708—Repeals the narcotic drug law and abolishes the department of narcotic drug control All books papers records and documents are turned over to the state commissioner of health, but no duties are transferred

Chapter 510—Provides for a division of sanitation of the state department of health and transfers certain duties heretofore assigned to the state department of health to the state engineer

Chapter 130—Empowers board of supervisors in counties not having a tuberculosis hospital to appoint and employ such public health nurses as such board may deem proper

Chapter 263—Empowers board of supervisors in counties not having a tuberculosis hospital to organize and operate clinics for the medical examination of persons who are or may be suffering from tuberculosis

Chapter 248—Empowers county superintendants or overseers of the poor to utilize in addition to hospitals such sanatoriums and boarding houses as are approved for such purposes by the state commissioner of health for the care and treatment of indigent sick persons

New York City

Personal—Dr Henry W Frauenthal, medical director of the Hospital for Joint Diseases will sail July 27, to visit the various modern hospitals in England, France and Italy——Dr Arnold Knapp sailed for Europe, July 16, on the Royal Mail Steam Packet *Oropesa*

Physician's License Revoked—A report from the board of regents of the University of the State of New York states that the license of Dr Samuel J Bernfeld was revoked, June 20, 1921, on the ground that Dr Bernfeld has been convicted of conspiracy to evade the Selective Service Act

New Jewish Memorial Hospital.—Plans for the new Jewish Hospital to be erected at Dyckman Street overlooking the Hudson have been completed It is proposed to utilize as a part of the hospital a building now in the grounds This will undergo reconstruction and a new wing will be added so that the capacity of the new institution will be 165 beds The completed structure will cost about $350,000 and will be dedicated to the memory of the Jewish soldiers, sailors and marines who died in the World War

Test Right to Treat Drug Addicts—Indicted in the federal court on the charge of violating the Harrison Narcotic Law it is reported that Dr Morris Behrman expects to make a test case of one of the indictments Dr Behrman is charged with having given a prescription to a Pullman porter for 150 grains of heroin, 360 grains of morphin and 210 grains of cocain The demurrer is on the grounds that the dispensing of drugs by the physician was in the course of his professional practice only, that there is no allegation that he wrote the prescription with criminal intent, and that there was a desire on his part to cure the addict

OHIO

Physicians Honored—The Allen County Medical Association held a special meeting and banquet recently in honor of Drs Jonathan B Vail and Enos G Burton, Lima, and Newton Sager, Lafayette each of whom had been in active medical practice more than fifty years Drs Vail and Burton both graduated the same year 1871 at the Ohio Medical School now the Ohio and Miami Medical School of the University of Cincinnati

OREGON

New Officers of the Oregon State Medical Association—At the recent meeting of the state medical association, the following officers were elected for the ensuing year president, Dr Abram L Houseworth Marshfield, vice presidents Drs Edward B McDaniel, Portland, George E Houck Roseburg, and Henry E Pernot Corvallis, secretary, Dr T Homer Coffen Portland, and treasurer, Dr Jessie N McGavin, Portland

North Pacific Medical Association—At the meeting of the Tri-State Medical Association referred to in THE JOURNAL July 16 there was organized the North Pacific Medical Association, to comprise Oregon Idaho, Montana Utah and British Columbia, which will meet annually, independently of the different state medical associations Dr John Earle Else Portland will serve as chairman, and Dr Homer Dudley, Seattle will serve as secretary, until the first annual meeting which will probably be held in Vancouver

PENNSYLVANIA

Tuberculosis May Be Quarantined—According to a recent statement of the state health department tuberculosis being classed as a communicable disease, may legally be subject to quarantine— as in the case of smallpox, scarlet fever or diphtheria—when a patient fails or refuses to take the necessary precautions to protect others from infection

Philadelphia

Opium Seized—More than $2,000 worth of opium was seized one Chinese was arrested and another escaped, July

14, when Agent Unfred of the narcotic division of the International Revenue Department raided a Chinese laundry at 909 Locust Street Opium was secreted in secret compartments in the wall, floor and stairway

Schools on Insanitary List—Sixteen out of the 328 school buildings in the city are given a rating of "bad" in the annual sanitation survey presented to the board of education at its regular meeting by Dr Walter S Cornell, director of the medical inspection division of the public schools The survey lists seventy-seven buildings as "excellent", ninety-four as good," and thirty-two as "poor,' in addition to those already mentioned as "bad"

The Temple University School of Medicine—In the reorganization of the School of Medicine, the following have been elected full-time professors Dr David Gregg Metheny professor of anatomy and histology, Dr Joseph Garrett Hickey, professor of physiology, Dr William H Reese, professor of chemistry, Dr Max H Bochrock has been elected clinical professor of neurology and will be visiting neurologist to the Samaritan and Garretson hospitals, Dr Albert Strickler has been elected clinical professor of dermatology, and becomes visiting dermatologist to the Samaritan and Garretson hospitals

TENNESSEE

Election of Officers of State Medical Board—The state board of medical examiners, at its annual meeting, June 27, at Nashville, elected Dr William I McCreary, Knoxville, as president, to fill the unexpired term of the late Dr Ambrose McCoy, Jackson The other officers elected, were vice president, Dr Benjamin L Simmons, Nashville, and secretary, Dr Alfred B DeLoach, Memphis

UTAH

Personal—Dr James Earle, Salt Lake City, who during the war had charge of the eye department of the American Aviation Training Station at Issoudon France, has recently been appointed as a surgeon in the U S Army and ordered to report for duty at the government hospital at Biltmore N C

WISCONSIN

Department of Public Health Nursing—The governor has signed the bill creating a department of public health nursing A director of nursing will be appointed sometime before September, and the work of the department will be reorganized along the lines set forth in the bill The measure was supported by the nursing organizations of the state

Public Health Laws—The last legislature appropriated $51,000 per year for general administration for the state board of health, $41,250 for venereal disease control work, $13,300 for the bureau of communicable diseases, $5,000 for supervision of public comfort stations and rest-room construction and $31,000 during the first year and $21,000 the second year, for the bureau of child welfare and public health nursing Former appropriations of $7,490 per year for laboratories and $1 500 per year for silver nitrate for the prevention of infant blindness, were renewed A full-time health officer was provided for all cities of 25 000 or more Vaccination of schoolchildren at the expense of the municipality, except where parents choose their own physician, was also provided for Pneumonia and epidemic encephalitis were made reportable diseases

CANADA

Ontario's New Marriage Law—Section 2 of the amendments passed last session of the Ontario legislature gives power to the provincial secretary to issue to ministerial applicants or church authorities on their behalf, certificates of registration, and stipulates that, where it is apparent that any person registered has ceased to possess the qualifications entitling him to be registered, he may annul such registration and revoke his authority to perform marriages The right to perform marriages is extended to properly ordained clergywomen The enforcement of these amendments is to come into effect October 1 The registration is taking place under Dr John W S McCullough, of the provincial board of health Heretofore the privilege of issuing marriage licenses was in the hands of the jewelers of Ontario, but now it is taken out of their hands and vested in municipal clerks, and only duly registered clergymen of recognized denominations may legally perform the marriage ceremony

GENERAL

Special Course for Physicians—The Graduate School of the University of Minnesota announces a special one-year course in ophthalmology and otolaryngology, to begin Sept. 28 1921

American Nurses' Memorial in France—The cornerstone of the new Florence Nightingale Training School for Nurses at Bagatelle was laid, June 5, by Miss Helen Scott Hay, Savannah, chief nurse of the American Red Cross in Europe on behalf of Miss Clara D Noyes, Washington, D C, president of the American Nurses' Association and chairman of the fund for the memorial, who was unable to be present The school is dedicated to the memory of the 284 American nurses who gave their lives in the war, and it will be built with money collected through the three national organizations of America—the American Nurses' Association, the League of Nursing Education, and the National Organization for Public Health Nursing

Infant Mortality—According to a recent report, issued by the Children's Bureau, on infant mortality in the registration area since it was established in 1915, Pittsburgh lost more babies in proportion to its births in each year of the five-year period 1916-1920, than any other of the nine large cities in the area In 1920, there was a loss of one infant in every nine—the rate varying in different parts of the city from 64 per thousand in the most favorable ward to 157 per thousand in the most unfavorable Nearly one half of the babies who failed to survive died before they were a month old, and nearly one fourth of the deaths reported were caused by gastro-intestinal diseases Washington, Philadelphia and New York showed the most satisfactory progress toward a reduction of rates, though Minneapolis has consistently maintained the lowest rate of all of the nine cities

Medical Week in Kansas City—The Medical Association of the Southwest the Medical Society of the Missouri Valley, and the Medical Veterans of the World's War are planning to hold a combined meeting October 24-28, at Kansas City, Mo The committee of the Medical Veterans of the World's War is arranging a series of clinics for the mornings at all the Kansas City hospitals The afternoons will be devoted to scientific sessions of both the other societies The Midwestern Association of Anesthetists will be organized and will present a program, October 25 The Jackson County Medical Society will arrange special entertainments, which will include a golf tournament and a dinner dance at one of the country clubs Arrangements are also being made for special home-coming festivities for the graduates of the University Medical College, and one evening has been reserved for alumni dinners for representatives of the various colleges and universities attending the session

Development of Medical Education in Brussels—Mr H Goosens-Bara as official delegate from the hospital board of the city of Brussels, and Mr J B Dewin, who has been appointed by the city of Brussels as architect of the new hospital of St Pierre—a public hospital to be used as a teaching hospital of the medical school of the University of Brussels—have come to the United States in connection with a plan for the development of facilities for medical education in Brussels The Rockefeller Foundation is contributing more than $3 000 000 for new buildings and endowments for the medical school of the University of Belgium The laboratories and classrooms of the medical school will be entirely rebuilt and redeveloped on a new site adjoining that of the municipal hospital of St Pierre, which is also to be rebuilt and reorganized The new hospital will contain 350 beds with a well equipped outpatient department, laboratories and accommodations for teaching and research As a part of the general plan a nurses' training school is being established in memory of Edith Cavell and Madame Depage Mr Goosens-Bara and Mr Dewin will be the guests of the Rockefeller Foundation while investigating hospital administration in this country They will also visit hospitals and medical laboratories in Great Britain on their way back to Belgium

LATIN AMERICA

Street Named for Dr Gorgas in Havana—The name of Virtudes Street in Havana has been officially changed to "Mayor Gorgas," and metal plates with the new names have been affixed

Radium in Brazil—The *Brazil Medico* announces that Dr Cleef, professor of chemistry at Bello Horizonte, reports the discovery in Minas Geraes of a mineral substance hitherto unknown which possesses great radioactive properties

Memorial to Nuñez—A statue of Dr Enrique Nuñez has been erected at the entrance to the grounds of the Garcia Hospital at Havana, the construction of which was due to his initiative He was long chief of the national public health service

Finlay Park in Havana—The park that has been constructed opposite the headquarters of the national public health service in Havana has been named for Dr Carlos J Finlay, and a fine statue portraying him was recently unveiled It stands in the center of the park, and it is proposed to place in the corners of the park statues of the three members of the American commission which, with Dr A Agramonte, confirmed the transmission of yellow fever by the mosquito, as Finlay had suggested

Personal—The new monthly published at Mexico, *Medicina* states that Dr A Roman has resigned the chair of medical pathology in the National Medical School of Mexico, and Dr J T Rojas has been appointed in his place The latter has been commissioned by the medical faculty to go to Europe on a special mission, and Dr Canale is to serve pro tem—— At the same school Dr E Cervera has been appointed professor of microbiology——Dr J Azpuru España has been appointed professor of anatomy on the medical faculty of the University of Honduras——Dr H Valenzuela has returned to Tegucigalpa from a trip to foreign medical centers——Dr Miguel H Alcivar has been elected vice rector of the University of Guayaquil

Campaign Against Yellow Fever—In Brazil where yellow fever was formerly prevalent from Rio along the east coast and the Caribbean littoral to the Amazon and up the Amazon Valley to Yquitos in Peru, the infected area has been gradually reduced to a relatively small region on the east coast The disease seems now to be confined to a zone along the coast from Pernambuco to Bahia These ports are regarded as the endemic foci from which the infection is distributed from time to time over the surrounding region Recent reports indicate relatively high stegomyia mosquito index, particularly in Pernambuco One or two epidemics of minor importance during the year were brought under prompt control Active measures are being carried out under the direction of the Brazilian National Department of Health which has provided adequate funds for the purpose

On the west coast of South America the government of Ecuador has declared the country free of yellow fever, no case having been reported since June, 1919, a period of more than two years

Before the infection had been exterminated in Guayaquil, it appeared in epidemic form in the department of Piura just across the Ecuadorean border in northern Peru Here it had spread over a considerable area before attracting the attention of government authorities Some months later, in 1920, the Peruvian government instituted active measures under the direction of Dr Henry R Carter, of the U S Public Health Service, and the epidemic was promptly suppressed No reinfection has occurred in this department

Before completion of the work in Piura, however, the infection had been introduced from this region into the department of Lambayeque, further south, and again had spread over an extensive region before being detected and reported Here with a more dense population and a high stegomyia index the epidemic became relatively severe. Early in 1921 the government took charge of this second epidemic Dr Henry H Hanson has been placed in charge with full authority Funds for the work are being supplied by the government and the International Health Board Dr Hanson and his staff seem to be getting the situation in hand Recent reports indicate a steady lowering of the mosquito index and a corresponding fall in case reports

The situation in Mexico and Central America seems most encouraging Health authorities have been disposed to regard Merida Yucatan as an endemic focus of yellow fever of long standing In the transcribed records of the early Maya civilization there are references to epidemics of a disease in this region, the principal symptom of which was the vomiting of blood The mortality appears to have been so great that vultures came into the homes and devoured the bodies before other disposition could be made of them The last visitation of the blood vomiting disease, which is referred to in the records as the fourth, has been interpreted to have occurred during the year 1648 Sanitarians have looked upon Merida as the seed-bed from which the fever has spread from time to time, to appear in epidemic form throughout Mexico and the Central American countries Within the last two years epidemics of more or less severity have occurred in east and west Mexico, Guatemala, Honduras, Nicaragua and Salvador

The war against yellow fever is now on in all these countries The plan of operations made possible by a fine spirit of international team play brings all the work under unified administration In each country the government has created under its national department of health a yellow fever commission and has given to this commission full authority to deal with the situation The simple device of making one man director of each of these commissions has effected the necessary concert of effort The region to be covered is a large one First attention is being given to strategic centers with particular concentration on Merida, Yucatan

There seems to be no yellow fever at the present time in and about Merida and only a few sporadic cases have been *reported within the last two months anywhere in* Mexico

For more than four months no case has been reported from any of the Central American countries The rainy season the period of greatest danger from yellow fever, is now coming to an end Those who are responsible for the work understand, however, the importance of continuing energetic measures against mosquitoes The plan of operation provides for holding the mosquito index below the danger point for at least a year after the last reported case of yellow fever

FOREIGN

Statue of Professor Fuchs Unveiled at Vienna—A marble bust of Prof E Fuchs, the Vienna ophthalmologist was unveiled June 14 the occasion being his seventieth birthday He retired in 1915

Rollier's Graduate Course in Heliotherapy—A theoretical and practical course in heliotherapy is to begin at Leysin, Aug 16-20, 1921 Address the Secretariat Medical de M Rollier Leysin, Switzerland, for further details

The Donders Memorial—A large statute of Donders, the great Holland ophthalmologist and physiologist, was recently unveiled with much ceremony at Utrecht where he had been professor of ophthalmology and of physiology until his death in 1889

Memorial to Achucarro—A tablet has been placed in the provincial hospital at Madrid commemorating the work of Dr Achucarro, the promising young histologist whose research had carried his name far before his untimely death a few years ago

International Physiotherapy Congress—The *Medicina Ibera* states that the date of the Sixth International Congress on Physiotherapy has been appointed for May, 1922 Professor Calatayud is to preside at the meeting, which is to be held at Madrid Dr Bartrina Costa is the secretary-general

The Roentgen Institute of the Dresden Gynecologic Clinic—The inauguration of this new institution occurred June 1 It was organized by means of donations from America to a total of 274,000 marks, the sum for this special purpose was raised by a concert in New York

Venereal Disease in Germany—The *Deutsche medizinische Wochenschrift* states that the collective inquiry in regard to the number of cases of venereal disease in medical care during the last month of 1919 has yielded the preliminary figure of 136,000 cases, that is, 2 2 for each thousand inhabitants

Medical Legislators in Italy—About eighty physicians were candidates for the national legislature at the last elections according to the *Riforma Medica* Twenty-three were elected including Dr Raffaele Paolucci, the hero of Pola Eleven who had previously been members of the lower house failed of reelection

Prize to Dr Friedrich—At the recent annual meeting of the German specialists in digestive and metabolic diseases, the 1 000 mark prize of the Ismar Boas Foundation was awarded to Dr L von Friedrich assistant at the Frankfort medical clinic for his work 'Influence of the Act of Mastication on Secretion in the Stomach in Health and Disease'

New Medal for Medical Profession—The Council of the Royal Society of Medicine, at the annual general meeting July 6 made the first award of its gold medal to Sir Almroth Wright, F R S (London), in recognition of his valuable services to medicine during the war The medal is to be awarded triennially for original discovery in medicine and other allied sciences or for the practical application of the *results of previous investigations of other scientists*, or for the most valuable contribution in any other way toward the progress of the art and science of medicine, preventive medicine, or surgery

Graduate Courses in Germany—A course on exotic pathology and medical parasitology is announced to open at Ham-

burg September 19, in the Institute for Marine and Tropical Diseases The twelve lecturers include Giemsa and Nocht ——The German Radiotherapy Society is organizing a series of course one, especially intended for gynecologists, opens under Wintz, August 1-6, at Erlangen A course on radiotherapy for tuberculous affections will be held, October 3-8 at Freiburg A graduate course in dermatology is planned for the fall at Hamburg in the Arning clinic and the lupus institute For information on the radiotherapy courses address Prof H Meyer, Parkallee 73, Bremen The third international graduate course at Karlsbad is announced to open September 11-17 Dr E Ganz of Karlsbad is in charge

Official Expression of the Gratitude of France—The *Presse Médicale* for June 29 gives a list of Belgians and others to whom the silver medal de la Reconnaissance Française has recently been awarded The list contains the names of three American physicians Dr Carroll Bull a collaborator of Carrel The medal is awarded, it is said for his "immense services in scientific research and as assistant to Carrel" The other recipients are Dr J P Hoguet and Dr MacRobert, physicians to the French Hospital in New York where they are said to have rendered "signal aid to French soldiers and marines on service in New York and to other persons of French nationality during the war" One medal was awarded to Dr Max Jessurun of Harlem the Netherlands He is said to have been the moving spirit in the Harlem committee which provided free hospital care for French children and free medical care of the French refugees in Harlem during the war, and helping to ameliorate conditions for them

Arrangements for Foreign Assistants in Paris Clinics—The *Paris Medical* announces that the Paris medical faculty has now decided to accept foreign physicians as assistants in its clinics Those desiring such a position must apply to the dean of the faculty with credentials and a letter of recommendation from the dean of their own medical faculty The credentials are examined by a special committee and laid before the faculty board If accepted the candidate becomes assistant in the clinic for a period not less than three months or longer than one year At the conclusion of his service he receives a certificate signed by the president of the university and registered at the ministere de l'instruction publique Another advantage of the plan is said to be that some of the professors will allow the assistants to serve as *moniteurs* thus associating them with the teaching force Our exchange adds that competition for service as interns in the hospitals is also open to foreign candidates, saying that many physicians of various countries have served a term as intern in the Paris hospitals The address of the medical faculty is merely Faculte de Medecine de Paris

German Scientists Make Prohibition Appeal—An appeal to the profession in Germany, signed by Kraepelin, Abderhalden, Strumpell and Gaupp is being published in the German medical press The appeal states "About fifteen thousand million marks are spent annually for alcoholic beverages in Germany A large proportion of German grains, potatoes and sugar are diverted annually to the production of liquor Our children and students are being fed by the Quakers in the lands of our late foes, and already we are hearing from these Quakers the reproach that while they are voluntarily imposing privations on themselves to carry on this charitable work in order to help us, we Germans are squandering such vast sums on alcohol and tobacco that with the tenth part of this expenditure for luxuries the distress of the children in Germany could be done away with" "Is such a condition as this compatible with the dignity of Germany and is it to be borne that the authorities on the questions of feeding our suffering people can look on placidly while the people are thus in heedless folly destroying the future and bringing contempt on the nation? Alcohol and tobacco are not indispensable, they are actually harmful for some, they are a terrible drain on the economics of the land, they hinder the progress of our children and grandchildren and their escape from the hard yoke now pressing so heavily upon us What we need is an iron will unwearied industry, good common sense and nourishing food with its economical utilization" The appeal urges physicians to dispel the illusions in regard to alcohol, and combat the frivolous heedlessness of the masses so that history may not record that the profession failed in its duty during the time of the country's greatest distress The *Munchener medizinische Wochenschrift* commends this appeal and urges the profession to work for national prohibition, like that in America "What was possible in America, must be possible also in Germany"

Registration of Syphilitics in Denmark—The central laboratory of the national public health system in Denmark inaugurated last year a card index for all the specimens of serums sent in for analysis by physicians A special form is used by which, without infringing on professional secrecy, each syphilitic thus listed can be identified and his case history traced through the years Five data are recorded for each case sex, day and year of birth, the initial of the surname, the date when the disease was first diagnosed, the name of the first physician or institution giving treatment. Dr O Jersild is in charge, and he has recently published in the *Ugeskrift for Læger* a report on the first six months' working of the institution There are now 10 000 cases thus card-catalogued The institution aims merely to serve like the central office of the telephone service Every physician sending in the above data, or even the first three, of a case is at once put in touch with the physician or physicians or institution which have given this individual patient treatment before On each card is entered the date of each course of treatment the name of the institution the institution's register number for the case and the Wassermann findings at the time As the enquiring physician is thus enabled to supply these data, it is an easy matter for the hospital or physician to give him the desired information in regard to details of treatment etc. As the years pass the value of such a record will become more and more apparent, as the outcome of the case can be compared with the exact treatment dosage, etc Jersild has invented a name for this card index, the kartothek, using the last syllable in the Danish word for library, as if we should say card-ary instead of libr ary

Deaths in Other Countries

Dr V **Urbantschitsch**, professor of otology at the University of Vienna and author of numerous works on the embryology etc, of the ear, aged 74——Dr C **Moreau**, president of the Tournai Union Medicale, Belgium, aged 81——Dr T **Schilling**, a leading internist of Nürnberg——Dr **Tirso Luis Crespo**, chief of the public health service in Placetas Cuba, aged 54——Dr J **Paes de Carvalho Sobrinho**, a rising ophthalmologist of Rio de Janeiro, aged 34

Government Services

Training Division in Surgeon-General's Office

By order of the Secretary of War a training division has been established in the Surgeon-General's Office of the Army under the direction of Brig-Gen Walter D McCaw General McCaw will assume these duties in addition to his duties as commandant of the Army Medical School at Washington His chief assistant is Lieut-Col Robert U Patterson The training division will have general supervision of all training in the Medical Department of the Army, including the Medical Field Training School at Carlisle Pa, Army Medical School at Washington and all reserve officers medical training schools established at the various universities in the country General McCaw began his work on July 1

Tuberculosis Wards in General Hospitals

Opening of tuberculosis wards in all the general hospitals is being recommended by the U S Public Health Service thus giving support to a recent resolution adopted by the American Medical Association Such a move, according to the statement issued by Surgeon-General Cumming of the Public Health Service, will be of enormous benefit, not only to most of the 2 000 000 known victims of the disease in the United States, but also to thousands of others in whom the disease is incipient and easily suppressable if promptly treated

MEDICAL OFFICERS, UNITED STATES NAVY, RELIEVED FROM ACTIVE DUTY

CALIFORNIA

Los Angeles—Castle, C
Lowell C H
San Diego—Elliott R D
San Francisco—Ehrenclou A. H

DISTRICT OF COLUMBIA

Washington—Hiden M B
Troxell J W

MASSACHUSETTS

Chelsea—Shoenfeld D D

VIRGINIA

Haymarket—Lightner G H
Norfolk—Gilmer W I

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 27, 1921

Graduate Medical Teaching in London

The report of a postgraduate medical committee appointed by the minister of health to investigate the needs of physicians practicing in this country and other graduates for further medical education in London has just been issued The continent, and in particular Vienna, has long been regarded as the place where medical graduates can most easily secure what they need in the way of general and specialized instruction An opportunity now presents itself for providing in this country a center at which students from overseas, whether from our own colonies, from America or from foreign parts, may find facilities for graduate medical instruction, and the metropolis, with its unique supply of clinical material and its 38,000 beds, seems singularly well placed to provide such a center Cottage hospitals, it is urged, should be used to a greater extent than at present for increasing the experience and efficiency of physicians All physicians should have the facilities for bringing their own patients into the wards, and of attending them there The chief recommendation is for the establishment of a central postgraduate hospital and school, which should be devoted to graduate work It is not recommended that a new hospital should be built The hospital should be one equipped in an up to-date fashion, with at least 300 beds, and a fully developed outpatient department Associated with it would be the great special hospitals of the metropolis One of the existing undergraduate schools might be converted into such a center The committee also recommends the institution of a central office, which would link up graduate study in the United Kingdom, and in due course with that of the continent of Europe and America, and an institute of state medicine, directly connected with the University of London and under its administration occupying a position analogous to that held by the Institute of Historical Research The institute, in addition to providing instruction in public health, would furnish courses in forensic medicine, toxicology, and in industrial medicine It would accommodate students from overseas and foreign countries, and create an imperial link between them The scheme would involve an annual charge of $140,000

Impotence Quoad Hanc

A case of considerable medicolegal importance has been decided in the divorce court After nearly ten years of married life, a woman withdrew from cohabitation with her husband and instituted a suit for nullity of marriage on the ground that the husband was unable to consummate the marriage He denied this and alleged that sexual intercourse had taken place The evidence showed that the relations between the parties were not normal The war accounted for the delay in bringing the suit In giving judgment the judge (Lord Birkenhead, the Lord Chancellor) pointed out that the allegation was not that the respondent was generally impotent but that he was incapable of consummating this particular marriage Doubt had been entertained as to whether impotence quoad hanc (that is to say, with regard to the particular woman in question) entitled a woman to a decree of nullity but before and after the Council of Trent the Church had admitted and indeed enjoined nullity on that ground Recent authority on the point was, however, scanty Difficulty arose from the parties being the only important witnesses In this case the medical evidence as to the physical conditions observable in the petitioner and the respondent was important It was consistent with the petitioner's evidence and not with that of the respondent Her story might be true, his could not He therefore accepted hers as to the material facts and found that the marriage had never been consummated, and that over a period of years the respondent tried unsuccessfully to consummate it. It followed that he had always been incapable of consummating this particular union with this particular woman There was no allegation against her of frigidity, denied access or physical malformation The judge therefore granted her a divorce

The Hospital Crisis

The financial difficulties of the voluntary hospitals resulting from the effects of the war have been mentioned in previous letters The position became so serious that the minister of health appointed a committee to consider the position and make recommendations Its report has just been published There are in Great Britain 952 voluntary hospitals containing 52,194 beds In some cases the governing bodies have been able to meet the difficulties caused by the war without permanent injury to the institutions under their care, but the position of a large number of hospitals is such as to make it improbable that they can be continued on a voluntary basis unless prompt and vigorous measures are taken to reestablish the position of 1914 The receipts have not fallen off—indeed, they have increased, but the cost of provisions, drugs, dressings, fuel and labor has so grown that it far more than counterbalances the increase of income Unless some remedy is found there will be deficiencies in the present year in respect of the hospitals in the whole of Great Britain including London, amounting to not less than $5,000 000, and this without provision for the necessary extensions and improvements The position thus disclosed appears to involve danger to the whole of the existing voluntary hospital system Two of the large London hospitals (King's and the London) have recently closed some of their beds owing to lack of means, and others have indicated their intention to take a similar course If any considerable number of hospitals should close down, the shortage of accommodation would be such that the public would be compelled to step in and supply the deficiency, and the position of the hospitals throughout the country would be imperiled It has been suggested that liability for the hospitals should be taken over by the state or thrown on the rates, or at least that a regular yearly grant in aid should be made from one of those sources The committee considered that either proposal would be fatal to the voluntary system If this system falls to the ground hospitals must be provided by the public, and the expense of so providing them would be enormous They must then be carried on without the aid of the voluntary subscriptions and donations estimated at not less than $15,000,000 a year, and presumably without the income (about $5,000,000 a year) from endowments which were given to support only voluntary hospitals But the money loss to the state would be a small matter compared with the injury that would be done to the welfare of the sick for whom the hospitals are provided, the training of the medical profession, and the progress of medical research The combination of the hospital with the medical school is of inestimable value to both On the one hand, the teaching of medicine would be ineffective without the opportunities for observation and experience which the hospital affords, and, on the other hand, the constant presence in the wards of teacher and student and the desire of both to maintain the reputation of their hospital are an incentive to care and vigilance in the treatment of the sick The voluntary hospital system, which is peculiar to the English-speaking peoples, is part of their heritage, and it would be lamentable if by our apathy or folly it were suffered to fall into ruin The committee thinks

that the voluntary system can be saved by a more systematic appeal for donations, by increased weekly contributions out of wages from the classes who use the hospital, and by increased payments But in order to tide over the present acute difficulty, it recommends that Parliament should vote a sum of $5 000,000

Professional Secrecy Again in the Courts

The unsatisfactory position arising from courts of law in this country in not recognizing the obligation of professional secrecy has already been referred to in these columns The recent arrangements of the Ministry of Health for the free treatment of venereal diseases has raised the difficulty in a new form, for it is provided in the regulations that "all information obtained in regard to any person treated shall be regarded as confidential" In a case before Mr Justice Horridge in the divorce court the question arose when the husband's lawyer called a physician who had treated his wife The physician asked to be relieved from giving evidence and claimed privilege as such He referred to the regulation mentioned above The judge said that the Ministry of Health had no power affecting the jurisdiction of the courts, physicians were subject to the orders of the court and must disclose what they knew The physician said he was placed in a painful position by this ruling The judge replied, "I can not see that You are bound to observe the regulations not to disclose voluntary information you have obtained, but so far as giving information which you are bound to give in assisting the administration of justice, it is your duty to give it" The physician then gave the evidence required

The Rockefeller Foundation in London

Mr George E Vincent director of the Rockefeller Foundation, and Mr Wickliffe Rose and Mr Victor G Heiser members, have arrived in London to confer with representatives of the Colonial Office on the problems of tropical diseases It is possible that the foundation will assist research by grants The government gave a dinner, to which leading physicians were invited to meet the representatives of the foundation Mr Churchill, colonial secretary, who presided welcomed the guests and made an eloquent speech on the benefits conferred on mankind by tropical medicine

Overpopulation

Addressing members of the Economic Circle of the Lyceum Club on "Progress and Population,' Mr Harold Cox said that Malthus in 1798 was the first to deal with the problem of limiting the population He said that there was a tendency for the population to increase beyond the nourishment provided for it Unless the growth of the population was checked by prudential methods it would inevitably be brought to an end by cruel methods, such as starvation or war In various places we had famines, among others, in India and China, two countries which together contained nearly half the whole population of the world A large proportion of that population was living on the verge of starvation The resources of the world were exhaustible, and already we could see signs of exhaustion We had to dig deeper for our coal and this would inevitably come to an end Nations were competing with each other, notably Japan and Australia Such rivalry was the outcome of the population problem People thought the problem was remote, and with a great deal of unction, repeated the Biblical text to be fruitful and multiply This illustrated the power of the constantly repeated word These words were probably said to Noah when there were only eight people on the earth It seemed awful that people should be engaged in producing children doomed to die within a few weeks of birth During many centuries our population had not grown appreciably, but we had not suffered by this There was no brighter era in our history than the reign of Queen Elizabeth Bacon had said "Numbers alone do not determine a nation" The whole question was affected by theological considerations, and it was an interesting fact that the early Christian Church advocated celibacy If the population of England and Wales doubled itself every sixty years, as it did during the last century in a less period than separated us from the reign of Elizabeth there would be more people in this country than the whole world now contained Emigration would not solve the problem The only solution was to teach the feckless classes the wisdom which the more prudent classes had already learned

PARIS

(From Our Regular Correspondent)

June 17, 1921

A New Treatment for Syphilis

The daily press has made much ado about a new method for the treatment of syphilis The subject may be thus summed up Drs Levaditi and Sazerac of the Pasteur Institute presented a communication to the Academy of Sciences concerning the use of a new substance in the treatment of syphilis, namely, potassium sodium bismuthate. This substance is still in its experimental stage Intravenous injections of a watery solution of this compound were made in three syphilitic rabbits The following day no spirochetes could be found in the blood In a fourth rabbit given a subcutaneous injection of this salt, spirochetes disappeared in about four days No recurrence was noted in these animals four months after treatment The same results, namely, complete disappearance of spirochetes, were obtained in rabbits suffering from spontaneous infection, a natural occurrence in these animals and caused by spirilla Levaditi and Sazerac have brought about a prompt cure of primary symptoms of syphilis in man, and have noted at the same time the disappearance of spirochetes from the blood But no final conclusions the authors state, can be drawn from these experiments as several years must elapse before we can ascertain whether or not the treatment is adequate and whether or not recurrences may be anticipated

The Future University City

I mentioned in a previous letter the project relative to the erection of the university city The purpose of the movement is to procure for both French and foreign students of both sexes attending the University of Paris healthful boarding and rooming places, at moderate prices, under the best living conditions from a material, intellectual and moral standpoint. The 9 hectares needed for the project will be secured by dismantlement of old fortifications of the city The following items will be at the expense of the University of Paris (1) construction of buildings of the university city, (2) the landscape-gardening, (3) various installations in the park of the city for games and sports, and (4) upkeep of the city and its park The public highways leading to the university city will be constructed and kept in repair by the city of Paris

Dangers of Radium

At recent sessions of the Academy of Medicine considerable attention was given to the dangers of radium Dr C. Regaud, director of the biologic laboratory and the therapeutic service of the Radium Institute of the University of Paris, presented an interesting communication on the subject, from which I take the following excerpts The accidental absorption, by inhalation, of radium emanations is not dangerous except in a confined space The rays of radioactive substances present for the skin and deep-seated organs (and especially for the hematopoietic system) dangers similar to

those connected with roentgen rays Operators and attendants can protect themselves by forming the habit of (1) taking judicious advantage of the law of distance (especially through the use of special tongs in performing manipulations), and (2) interposing between the operator's body and any source of radiation leaden screens several centimeters thick and impervious to penetrating rays The few accidents that have happened up to the present time have been the result of ignorance of the danger and lack of precautions Regaud believes that in a well organized establishment with an instructed and well trained personnel, the nurses and others near the patients under treatment will not run any risk through the action of radioactive bodies Dr Tuffier, professor at the school of medicine of the University of Paris, was anxious to obtain documentary information on the dangers of radium from the important American centers where radium has been in use for a long time and in large quantities, since there entire hospitals are devoted to the study of radioactive action He has received replies from the Cancer Commission of Harvard University, the Howard A Kelly Hospital in Baltimore and the Mayo Clinic At the Mayo Clinic no menstruation troubles of any kind have been observed among the nurses handling radium applicators There have been only accidents of a local nature, such as cutaneous lesions, not at all serious To prevent accidents happening the personnel is changed very often However, the Cancer Commission of Harvard University, and the Kelly Hospital gave him the following information Soon after the study of radium therapy was begun, several cases of menstrual and general disturbances were noted among the nurses in charge of radium applicators These disturbances occurred when the nurses were in contact with radium for two or three months in succession They disappeared when the nurses left this service Five cases have been noticed during recent months, and since that time a rotatory schedule has been established to prevent these accidents so that now no nurse remains longer than two months in the service, and they are taught not to handle radium tubes without using tongs, and to keep them in a box specially constructed to prevent radiation At Harvard University manifestations of azoospermia were also noted, but these disappeared after a few months when the operators were protected against radiation At the Kelly Hospital, where the operators have had a great deal of experience in handling radium, a careful study has been made concerning accidents due to radiation A reduction of polymorphonuclear elements and an increase of lymphocytes in the blood were noted, sometimes also a slight leukopenia The disturbances that were noted at the beginning disappeared, thanks to precautions taken by the nurses Time is the most important factor in the case, for since the nurses have been changed every month no disturbances have been noted either in menstruation or in the blood The results of this inquiry show that accidents occurring through the handling of radium can be prevented by taking into account the duration of service and the factor of distance in the application of radium

A Colony of Wards of the State

The department of the Seine is the guardian of more than 50 000 wards Most of these children are entrusted to peasants and are brought up like the children of the family with which they live They remain loyal to country life and to the home that adopted them Pierre Godin has suggested that the department of the Seine might very properly send to northern Africa a certain proportion of these wards, since through their early training they are accustomed to agricultural work. It would help them by increasing their "life coefficient," and at the same time they would be useful to our colonies

BUDAPEST

(From Our Regular Correspondent)

June 9, 1921

Pellagra in the Southern Part of Transylvania and in Bukowina

Pellagra has existed in the southern part of Transylvania (now Roumania) and Bukowina for many years and before the war a vigorous attempt was made by the Austro-Hungarian government to check the disease When it was shown that pellagra might be caused by eating damaged maize, good flour was distributed by public officials, and means were taken to inform the population how to avoid the danger In various districts the government established bakeries where bread could be obtained at a nominal cost and a good result was obtained in diminishing both the prevalence and the severity of the disease Successive bad harvests during the war and the consequent want of a sufficient number of agricultural laborers impoverished the people, particularly the mountain population in the Carpathians and thereby neutralized to some extent the good work that has been done, while on the other hand, the more careful examination of hitherto unsuspected districts has also caused an increase in the number of cases reported In 1913 there were 387 cases reported in the affected counties of southern Hungary (Temes, Krasso Hungary and Doboka), which have an area of about 10,000 square kilometers with a population of 60 000 The number steadily increased since 1919 The same conditions prevail also in Bukowina, now belonging to the Roumanian kingdom The cases of pellagra in the hospitals of the respective territories are also more numerous than formerly Luckily, the death rate of the disease is unimportant, one out of every hundred cases ending fatally Even this is doubtful, as pellagra being strictly a disease of undernourishment, it can be surmised that the lack of proper food caused other ailments too promoting the fatal issue of the pellagra The treatment consists as mentioned before, in free distribution of maize, healthy food, administration of iron and quinin free of charge and if necessary, surgical interference Migrating commissions consisting of physicians and teachers, travel in the affected districts and teach the people how to live hygienically and how to feed themselves properly

Tuberculosis and Pregnancy

At the recent meeting of the Budapest Interhospital Association Dr Karsay gave an excellent summary of the views held at the present day on tuberculosis and pregnancy He also related five cases which came under his observation He states that pregnancy is a severe complication of tuberculosis, the severity of which increases with each pregnancy Important among the prophylactic measures should be the prevention of conception among tuberculous women If pregnancy has taken place, the woman should be kept under careful medical observation and if the tuberculous disease grows worse abortion should be strongly recommended During the later months of pregnancy the induction of premature labor does not offer any advantages over labor at full term and is fraught with seriousness for a tuberculous patient Moreover, as a tuberculous mother may give birth to a healthy child with fair chances of good health later on, it would be unfair to sacrifice needlessly the life of an infant He does not believe in universally interrupting the pregnancy as advocated by Maragliano and Hamburger

Koplik's Spots Not Constantly Present in Measles

Dr Sontagh has looked for the spots on the buccal mucous membrane first described by Koplik as preceding by some days the general eruption of measles, and has found them in twenty-four cases In one case they preceded the eruption by six hours in eleven cases by one day, in five by two days,

in three by one and one-fourth days, and in two by four days The spots were generally situated on the mucous membrane of the cheeks, opposite the molar teeth, but occasionally on the lips, beginning as slightly raised bluish white, circular, sharply defined points, and surrounded by a narrow red areola In a few days they generally increase slightly and become more prominent, and the areola enlarges and becomes more irregular in outline Their number varied between six and twenty, and the time during which they persisted, from two to six days They were not marked just before or at the time of the general eruption They were not present in fourteen cases (17 1 per cent) Since they are never seen in other conditions accompanied by fever, they are of the greatest importance for the early diagnosis of measles Sontagh claims that the buccal eruption in measles was first mentioned by Gerhardt and that their importance was recognized by Filatow in 1895, a year before their independent discovery by Koplik

The Spread of Venereal Diseases

A census of venereal patients, be it made with ever so much care, is always incomplete, partly because of the great number of irregular practitioners or quacks who compete with medical men in treating venereal diseases Owing also to the long duration of venereal diseases, those who are affected often lose patience and go from one medical man to another, with the result that the same patient appears in the statistics several times In the military statistics, however, all these difficulties of the enumeration are avoided and trustworthy data are obtained According to the military statistics, the prevalence of venereal diseases per thousand men in the Transylvanian army (eastern group of the Roumanian army) was 73 6 in 1919, and 61 0 in 1920 Thus, the incidence of syphilis is decreasing, owing to the fact that in 1920 (and since then continually) soldiers are examined once each week by venereal specialists, and if anything is found, they are sent to special hospitals where they are kept until they are radically cured Those suffering from syphilis are called in every three months for a course of treatment through the first year, and afterward they are called in for a blood test every six months during the next two years If in the meantime the soldier goes into civilian life, he is registered by the parish medical officer and has to present himself every six months at the nearest venereal hospital for testing his blood

BELGIUM

(From Our Regular Correspondent)

Liege, June 16, 1921

Results of the Antivenereal Campaign

Chief Inspector Rulot has just published the first statistical results on the antivenereal campaign in Belgium since the armistice. In some of our previous letters we have mentioned the organization of this campaign and have referred to official manifestations and private undertakings In this connection the author has published a series of curves that is rather suggestive It will be seen that a greater number of patients have been treated in private consultations, and there are good reasons why this is true These consultations given by general practitioners are easier of access and the opportunities are found everywhere throughout the country It is here that the patient finds also the maximum of privacy and discretion, factors still very much appreciated This attitude of mind may possibly change in the future, but for the present it still exists and must be taken into account if we are really desirous of combating effectively the progress of venereal diseases The patient received here, as in various other organizations, absolutely gratuitous treatment, there being no physician's fees or charges for drugs In large centers of population *polyclinics were in favor, with an average of 212 clients* The reason lies near at hand Here also patients find discretion observed Then dispensaries follow with an average of 193, hospital consultation, 100, and finally university consultations 47 In this last case the fear of the student is a factor The general course of the curves for syphilis and gonorrhea is the same An upward trend is noticeable until August, 1920 with syphilis showing a marked decrease from December 1919, to January, 1920 The curves for men and women show the same fluctuations with identical intensity The same is true for children, but the fluctuations are less pronounced This progressive increase in the number of cases does not necessarily mean that the disease has spread That may be the case, but the data are also capable of the interpretation that the lectures delivered by members of our society, the Societe belge d'eugenique, by numerous practitioners and by government public health officers have also borne fruit by bringing to the physicians patients who would have otherwise remained ignorant of their condition and the existence of organized prophylaxis

Appointment of Dr Gengou

The city of Brussels has appointed Dr Gengou general director of the Bureau of Public Health and Medicine This office could not have been entrusted to more experienced hands and the new incumbent is sure to render excellent service Gengou is a professor in the Universite libre of Brussels He is also director of the Pasteur Institute of the province of Brabant but he will resign this post, where he worked in close collaboration with Professor Bordet

Psychologic and Anatomic Study of Senility

The Belgian Society of Neurology and Psychology held recently a special session to celebrate the twenty-fifth anniversary of its foundation The psychologic and anatomic study of senility was the principal topic for discussion Dr Alexandre presented some interesting facts on the psychology of old age A knowledge of the psychologic aspects of the normal state of the aged is of importance to legal medicine on more than one account The relative ability of aged persons to make a will has been frequently discussed, and the question has been asked whether their testimony does not awaken *a priori* the same suspicion as that of a child And when an old man has to answer for a crime, have we not the right to suppose that, on account of his age there is a certain weakening of responsibility? These are questions which cannot be answered until we have been able to examine systematically a sufficient number of aged persons Also for general medicine this study will be very interesting Alexandre has reached the conclusion from his personal studies and from numerous articles in the literature that senile decadence of intellectual faculties is not portentous in its character It is pathologic and due to the accumulation of infectious or toxic substances It often occurs, however, that an old man through a series of experiences and an unconscious choice of habits reaches a state of egoism combined with euphoria and general indifference From the anatomic standpoint Dr Ley has shown the importance of changes in the endosecretory organs The organ in which individual differences are most strongly marked is the thyroid It does not seem, however, possible that changes found in these various organs can justify the theory that would explain old age as the consequence of changes in endosecretory organs He also directed attention to the difficulty of connecting various lesions of nerve centers with phenomena occurring during life It is evident that clinicians must continue to be dependent on pathologic anatomy, which alone can give the necessary precision for the delimitation of disease entities, but it seems that, up to the present time, the changes in the nervous *system of normal aged persons have not been the object of*

sufficient study This is why authors who have described lesions falsely typical of senile dementia, have, in reality, described the ordinary lesions of normal senility

Reforms in Belgian Penitentiary System

Important reforms in Belgium's penitentiary system are in course of realization For some time past certain scientists have declared that abnormal prisoners, of whom there are great numbers in prisons (a minimum of 25 per cent, according to Dr Vervaeck) are entitled to special treatment Among the abnormal delinquents and the irresponsible insane patients who are interned in asylums, there is a large number of persons for whom no adequate special provision has been made Among this number are found the constitutionally feebleminded and degenerate, also many neuropaths and drug addicts As a result of the labors of Drs Heger-Gilbert and Vervaeck, an anthropologic service has just been established in prisons, under the direction of Dr Vervaeck. Anthropologic laboratories have been installed in all the large prisons with a psychiatric annex in which delinquents can be examined, observed and when necessary, treated Thus the classification of delinquents and the study of their condition from a professional standpoint will be made possible The contamination of the good elements that are still susceptible of improvement will be prevented Among these abnormal prisoners there are some who should be confined neither in a prison nor in a hospital for the insane, for example, the criminal insane, kleptomaniacs, those with perverted instincts and abnormal sexual impulses Some of these ugly customers who cannot or will not submit to social restraint constitute on account of their vices, a very grave danger to society The asylum-colony of Reckheim has been created to take care of some representatives of this class

BERLIN

(From Our Regular Correspondent)

June 4, 1921

Delimitation of General, Local and Lumbar Anesthesia

At the recent Berlin meeting of the German Surgical Society, Professor Braun of Zwickau and Professor Denk of Vienna discussed the problem of the delimitation of general local and lumbar anesthesia According to Braun, lumbar anesthesia causes a higher mortality rate than general narcosis and should, therefore, be restricted to definite indications The secondary effects of anesthesia depend on the kind of anesthetic used In lumbar anesthesia the injections must not be made too high up Elevation of the pelvis should be avoided Its principal field of application is in amputations on the aged, more particularly in arteriosclerosis and dislocations of the hip and in fact in operations on the lower extremities and on the abdominal organs below the umbilicus In the hospital services it is indicated in about 1 per cent of all cases In epidural sacral anesthesia the element of danger is equally as great as in lumbar anesthesia Resorption from the epidural space is very great It should not be overlooked that the maximal dose of procain namely, from 0 4 to 0 5 gm should be reduced in dealing with weakened patients Sacral anesthesia is only to be considered when it is desirable to block the sacral plexus, for which purpose local anesthesia is sometimes to be preferred Its range of indications is therefore somewhat limited Intravenous anesthesia has not found many advocates as yet Local anesthesia by means of procain with the addition of epinephrin is entirely harmless, but even here the natural limitations must not be exceeded Braun himself employs local anesthesia in about 50 per cent of all operations Under certain circumstances the peculiar psyche of the patient may constitute a contraindication It will never be possible to dispense with general narcosis entirely, and it should be used from time to time if for no other reason than to demonstrate it to the oncoming generation of physicians The principal field of local anesthesia is minor surgery of the extremities Even in insignificant interventions general narcosis sets up rival claims on our attention Of the more extensive interventions, operations on the skull are mainly to be considered However, anesthesia of the dura is impossible to accomplish For opening up the skull general anesthesia is to be recommended Local anesthesia may be employed for operations on the neck, also for strumectomy In exophthalmic goiter, general narcosis is more appropriate on account of the excitable condition of the patient Local anesthesia applied to the cervical plexus is not devoid of danger For operations on the thoracic wall, local anesthesia may be employed, but for thoracoplasty, general narcosis is better In major abdominal operations he recommends that first a scopolamin-morphin solution be injected, after which the abdomen may be opened under local anesthesia, and then during the remainder of the operation general anesthesia may be resorted to from time to time, as necessary Postoperative lung affections and embolisms cannot be prevented by local anesthesia Anesthesia of the splanchnic nerve by the Kappis method has resulted fatally in some cases Its application after opening the abdominal cavity, after the manner proposed by Braun has proved its value but is not yet sufficiently developed for general use For blocking the sacral plexus in prostatectomy and cancer of the rectum lumbar sacral and parasacral anesthesia are rival claimants for favor, in his last 400 cases he had only eighteen failures In operations on the upper extremities, anesthesia of the brachial plexus by the Kulenkampff method has a claim on our attention To be sure, there is a danger of pleural injury in this form of anesthesia, but with correct technic it can be avoided Among other uses, it makes possible the reduction of fractures by means of the fluoroscope For operations on the lower extremities, lumbar anesthesia frequently asserts successfully its rights Many as are the excellent features of local anesthesia, it has its limitations, which must be observed

In taking up the subject, Professor Denk remarked that during recent years great changes had been brought about in general anesthesia, through which the element of danger has been much reduced In almost all circles ether is coming to be regarded as the best general anesthetic It is being used by the drop method with an open mask Primary death from heart failure does not occur with this method of narcosis Intermittent narcosis should be avoided The injection of a narcotic before the anesthesia has proved to have a certain value as it betokens a saving of 35 per cent. in chloroform and 40 per cent in ether narcosis To prevent lung complications after anesthesia, patients should be encouraged to breathe deeply (expectorants oxygen) Chloroform is contraindicated in affections of the liver and in disturbances in the portal circulation By some surgeons the Billroth mixture is preferred Diminution (*Verlemerung*) of the circulation by the Klapp method has proved efficacious and saves large quantities of whatever anesthetic is employed Ethyl chlorid anesthesia has proved its value but in larger doses ethyl chlorid constitutes a poison and is not adapted for narcosis Lumbar anesthesia occupies a midway position between local and general narcosis The form of anesthesia to be employed depends on the exigency of the case We should not attempt to establish any general rules but should leave the decision to individual judgment Aside from cases in which a contraindication obtains, owing to some disease or affection of the patient, the wishes of the patient may be the decisive factor, as in hernia operations It is better if the various methods are regarded not so much as rival claimants as they are as supplements of each other

Marriages

FREDERICK H STIRES, Hoydenville, Ohio, to Miss Anne Pauline Warfield, Somerton, Ohio, June 14

FRANCIS MARION STARR BOWERS to Miss Mary Catherine Keen, both of Wilkinsburg, Pa, June 21

WILLIAM EZARD BUCKLEY, Redgranite, Wis, to Miss Etta Costello of Fond du Lac, Wis, June 25

JOSEPH NEWTON SISK, Fort Worth, Texas, to Miss Elizabeth M Reed of Dallas, Texas, July 3

JAMES EDWARD FURR, Marks, Miss, to Miss Jessie May Chrestman of Lyon, Miss, in July

FRANCIS BRIAN GRYCZKA, Reading, Pa, to Miss Rose Summa of Kingston, Pa, June 30

JULIUS A JOHNSON, Bottineau, N D, to Miss Ruth Collins of Barnesville, Minn, in June

RODERICK F MCHUGH, Aitkin, Minn, to Mrs Victoria L Taylor of St Paul, in June

J SAMUEL CONNOR to Miss Elva Catherine Negley, both of Waynesboro, Pa, July 1

FRED CRENSHAW, Fairfield, Ala, to Miss Alberta Thomas of Macon, Ga June 11

PHILLIP RAPHAEL LEHRMAN to Miss Wanda Scheps, both of New York, June 28

GEORGE HERRMANN, St Louis, to Miss Anna Williams of Vandalia, Ill, June 30

NATHANIEL BAINBRIDGE LIEF to Miss Mildred Glass, both of New York, June 29

PAUL A O'LEARY to Miss Ruth Youmans, both of Rochester, Minn, in June

EDGAR EVERETT POOS, Okawville, Ill, to Miss Helen Duzeski of Chicago, July 2

MYRON I INGRAM to Miss Cecile Friedman, both of Chicago, June 15

HAROLD SCHWARTZ to Miss Lulu Nimmo, both of Butte, Mont, in June

The notice of the marriage of FOREST BERTRAM AMES to Miss Mildred Mabel published last week, should read Miss Mildred Mabel Wilder

Deaths

Norman H Morrison, Los Angeles, Kansas City (Mo) Medical College, 1880, member of Medical Society of the State of California, chief surgeon of the Santa Fe Railway system, formerly chief surgeon of the California Railroad Company, builder of the Los Angeles Hospital, died, July 3, following an operation at the Santa Fe Coast Lines Hospital, Los Angeles, of which he was founder, aged 68

Henry A Connolly, Kingston, Ont, Queens University, Kingston, Ont, 1908, died, June 26, from cerebral hemorrhage, at Ottawa, Ill, while on a visit from Warracknabeal, Australia, where he had made his home for the last twelve years, aged 49

Ezra B Potter, Rochester, N Y, University of Pennsylvania Philadelphia, 1872, for thirty-eight years assistant superintendent at the Rochester State Hospital, member of the Medical Society of the State of New York, died, June 24, aged 73

William W Stuart, Clarksdale, Miss, Eclectic Medical Institute, Cincinnati, 1858, served in medical department, Confederate army, member of the Mississippi State Medical Association, died, June 29, from general debility, aged 86

John H Moon, Cooperstown, N Y, Albany Medical College, Albany, N Y, 1872, member of the Medical Society of the State of New York, died, June 28, in the Thanksgiving Hospital, of uremia, following an operation, aged 72

James R Carroll, Henderson, Tenn, Kentucky School of Medicine, Louisville, 1876, Vanderbilt University, Nashville, 1881, member of the Tennessee State Medical Association, county health officer, died, June 29, aged 69

LeRoy Rogers, Huntingdon, Ind, Eclectic Institute, Cincinnati, 1880, veteran of the Civil War, died, June 13, at the National Soldier's Home, Danville, Ill, from acute cardiac dilatation, mitral insufficiency, aged 76

James S Washington, Somerville, Tenn, Jefferson Medical College, Philadelphia, 1861, Confederate veteran, practitioner in Somerville for more than half a century, died, June 29, after an illness of two weeks, aged 83

Joel M Ingersoll ⊕ Rochester, N Y, Bellevue Hospital Medical College, New York, 1879, specialized in otology, laryngology and rhinology, died, July 3, at Brigham Hall, Canandaigua, N Y, aged 64

Dwight Dudley, Endicott, N Y, Medical Department of Columbia College, New York, 1864, Civil War veteran, for twenty years on the U S Pension Board, died, May 19, from chronic nephritis, aged 79

John T Seale, Neches, Texas, University of Alabama Tuscaloosa, Ala, 1897, member of the Medical Association of the State of Alabama, died, June 26, after an illness of two months, aged 59

John Turner Roberts, Kountze, Texas, Southern Methodist University, Dallas, Texas, 1911, died, June 27, at Beaumont Texas, from a complication of diseases, following an operation, aged 33

Alice Burritt, Washington, D C, New York Medical College and Hospital for Women, Homeopathic New York, 1879, died, July 6, at the Homeopathic Hospital, Washington aged 67

Andrew Jackson Smith, Garner, N C, Vanderbilt University, Nashville, Tenn, 1912, died, June 22, in a hotel at Winston Salem, N C, from an overdose of morphin, aged 41

James Lonsdale, Sauk Rapids Minn, Rush Medical College, 1879, Civil War veteran, died, June 29, at St Raphael's Hospital St Cloud, Minn, from heat prostration, aged 74

Abraham Suter Metzler, Coshocton, Ohio, Charity Hospital Medical College Cleveland, 1868, veteran of the Civil War, died, May 14, following a long illness, aged 81

Harry Vaughan ⊕ Morristown, N J, College of Physicians and Surgeons, Baltimore, 1895, assistant to staff, All Souls Hospital, Morristown, died, June 22, aged 46

Daniel Webster Rumbaugh, Willard, Ohio, University of Wooster Cleveland, 1873, died May 11, from a complication of diseases, in Sandusky Hospital, aged 75

William J Moore ⊕ Adams, Minn, Bennett Medical College, 1893, died in St Mary's Hospital, Minneapolis, from chronic nephritis, June 21, aged 50

Eli S Warlick, Morgantown, N C, University of Tennessee, Memphis 1881, member of the Tennessee State Medical Association, died, July 4, aged 67

John William Norris, Oregon City, Ore, Rush Medical College Chicago, 1872, Civil War veteran, died, June 30 after a lingering illness, aged 77

John C Johnston, La Grange, Tenn, College of Physicians and Surgeons, Memphis, 1908, died, May 12, after an illness of two weeks, aged 51

George Porter, Orlando, Fla, New York Homeopathic Medical College and Hospital, 1880, died, April 29, from heart disease, aged 65

Thomas T Earle, Greenville, S C, George Washington University, Washington, D C, 1870, Civil War veteran, died, June 30, aged 76

William Rohder, Valier, Ill, National University of Arts and Sciences, St Louis, 1912, died, June 24, from heart disease, aged 46

Howard C Fickes ⊕ Owen, Wis, Jefferson Medical College, Philadelphia, 1886, died in June, at Chippewa Falls Wis aged 68

Henry North Graves, Dallas Texas, University of Nashville, 1868, served in the Confederate army, died, June 28, aged 75

Austin B Fuller, New Haven, Conn, Yale Medical School, New Haven, 1892, formerly a dentist, died, June 26, aged 83

Agnes V Swetland, Omaha, State University of Iowa College of Medicine, Iowa City, 1891, died, April 16 aged 74

Benjamin Frankson, Upham, N D, Milwaukee Medical College, Philadelphia, 1874, died in June, aged 54

Orella S Martin, Salamanca, N Y, Homeopathic Hospital College, Cleveland, 1870, died, June 15, aged 60

Marion Koogler, Marion, Ohio, Jefferson Medical College, Philadelphia, 1874, died in June, aged 73

Charles W Hall, Tacoma, Wash, Rush Medical College, Chicago, 1887, died in June, aged 58

⊕ Indicates Fellow of the American Medical Association

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

Manhood Pills, Phoenix Chill Cure, Spanish No-Kink and Phoenix Skin Success Ointment.—In February and December, 1919 Lewis A Fitzpatrick, Sr and Lewis A Fitzpatrick, Jr trading as the Fitzpatrick Co, Helena, Ark shipped a quantity of the nostrums just listed

The 'Manhood Pills' which were labeled 'Phoenix Mfg Co Helena Ark" were found to contain very small quantities of strychnin (possibly with nux vomica) zinc (probably as phosphid) and cantharides ("Spanish fly") together with plant extractives from damiana The pills were falsely and fraudulently represented as effective to restore lost manhood and bring strong, healthy sexual power

The "Phoenix Tasteless Chill Cure alleged to be "Prepared by Phoenix Mfg Co, Helena, Ark" was found by the federal chemists to be a syrup prepared from glucose containing quinin sulphuric acid and plant extractives from senna and possibly licorice together with a small amount of alcohol It was falsely and fraudulently represented as a preventive treatment remedy and cure for chills and fever ague and all malarial disorders and for driving out "all the poison that is in the body"

The "Spanish No-Kink or Hair Straightener' was declared by the federal chemists to be a mineral jelly scented with citronella It was falsely and fraudulently represented as a preventive treatment remedy and cure for head itch, tetter and all scalp troubles to remove dandruff and the cause of dandruff and—more wonderful still—"to cause five hairs to grow in place of one"

The "Phoenix Skin Success Ointment' which was labeled as containing 10 per cent mercuric oxid was reported by the federal chemists to consist of mineral wax, talc, and carbonate of lime scented with citronella and containing no mercury compounds It was falsely and fraudulently represented as a cure for eczema and all other itching skin troubles and eruptions all parasitic skin diseases running sores and scalp troubles etc

In October 1920 the two Fitzpatricks pleaded guilty and were fined $120 and costs—[*Notice of Judgment No 8796 issued May 13 1921*]

Arthur's Sextone Tablets—A quantity of this preparation alleged to have been shipped by the Palestine Drug Co of St Louis in January 1920 was declared misbranded The Bureau of Chemistry reported that analysis showed the pills to be composed essentially of iron and zinc salts, caffein and unidentified plant extractives and traces of phosphates The package contained such claims as

Designed to Correct the Evil Results Following Sexual or Alcoholic Excesses Overwork Worry Etc

Sextone Tablets for either sex Compo ed of the Most Potent and Dependable Aphrodisiac Agencies

Stimulate the Sexual Plexus nourish the nervous system and build it up

These claims were declared false and fraudulent in that the product did not contain any ingredient or combination of ingredients capable of producing the effects claimed" In November 1920, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[*Notice of Judgment No 8839 issued May 20, 1921*]

Palmo Tablets—The McCullough Drug Co Lawrenceburg Ind, are alleged to have shipped in May 1920 a quantity of this product which was declared misbranded The Bureau of Chemistry reported that the tablets consisted essentially of plant extractives, including damiana and nux vomica, iron phosphate and a small amount of phosphorus They were falsely and fraudulently recommended for nervous exhaustion depression or despondency, irritability and for "excesses of the usual kind" and were declared to 're-animate and re-vitalize." In November, 1920 judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[*Notice of Judgment No 8809, issued May 20 1921*]

Savatan—In May 1920 the S Pfeiffer Mfg Co of St Louis is alleged to have shipped a quantity of this preparation which the federal authorities declared misbranded Analysis by the federal chemists showed the product to consist of capsules containing essentially, oils of tansy and mint and green apiol The product was labeled in part

'The Effectual Emmenagogue
To Prevent Irregularities Take one Savatan three (3) times a day for four or five days before the expected appearance of the menstrual period

These and similar claims appearing on the package were declared false and fraudulent and in November, 1920 judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[*Notice of Judgment No 8805, issued May 20 1921*]

Parto-Glory—In June, 1920, the Partola Service Corporation New York, consigned a quantity of this preparation which the federal officials held was misbranded Analysis of a sample of the article by the Bureau of Chemistry showed it

Ansieta', Eccitabilita', Paura
SONO I NEMICI PIU' TEMIBILI DELLA NOSTRA SALUTE E DELLA NOSTRA VITA
PARTO GLORY

to consist of a solution containing essentially an iron salt strychnin quinin and potassium bromid The trade package contained such claims as

For every form of nervous affliction used with remarkable success whenever nerves have been affected

The great Upbuilder of the Nervous System

Great Wonderful Nerve Tonic.

a genuine powerful nerve tonic that builds up from the bottom

Parto-Glory is a friend in need for men and women who have indulged too freely in the excesses and frivolities of life and who are alarmed by the evident decline of capacity ability and even desire to take part in the joys of healthy vigorous ambitious manhood and womanhood

Parto-Glory is what the drinker needs to steady his nerves clear his mind brace him up give him a hold on himself

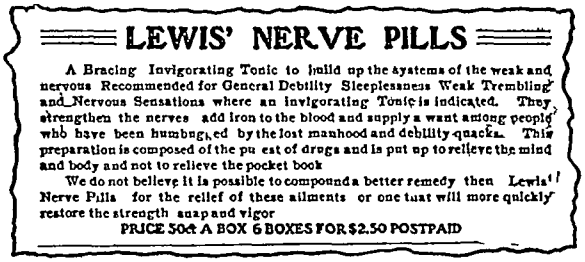
These and similar claims were declared false and fraudulent and in November, 1920 judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[*Notice of Judgment No 8884 issued May 18, 1921*]

Damiana Compound with Saw Palmetto—The Hollander-Koshland Co Baltimore Md were alleged to have shipped in June 1920 a quantity of Damiana Compound with Saw Palmetto which was misbranded The federal chemists reported that analysis of the article showed it to be a solution containing damiana extractives an iron (ferric) salt and nux vomica alkaloids It was falsely and fraudulently represented to be effective as a remedy cure, and preventive of sexual weakness loss of manhood, debility lack of virility and impotency psychic impotency, spermatorrhea etc. In October 1920 the court ordered that the cartons in which the product came should be destroyed and the labels removed from the

bottles and the product be sold by the United States marshal, provided, however, that, if the sale could not be effected in such a way as to realize a substantial amount, it should be destroyed—[*Notice of Judgment No 8887, issued May 18, 1921*]

Bick's Sextone Pills—The Palestine Drug Company of St Louis are alleged to have shipped in January, 1920, a quantity of this product which the federal authorities declared misbranded The Bureau of Chemistry reported that the preparation consisted of two pills, chocolate-colored and orange-colored, respectively The former consisted essentially of calcium carbonate, iron oxid, a small amount of plant extractives and sugar The latter consisted essentially of finely divided metallic iron, nux vomica alkaloids and calcium carbonate They were falsely and fraudulently labeled as aphrodisiacs In November, 1920, a decree of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[*Notice of Judgment No 8827, issued May 20 1921*]

Lewis' Nerve Pills—The A H Lewis Medicine Co, St Louis, Mo, shipped a quantity of these pills in May, 1919 which the federal authorities charged were misbranded The Bureau of Chemistry reported that analysis showed the pills


LEWIS' NERVE PILLS

A Bracing Invigorating Tonic to build up the systems of the weak and nervous Recommended for General Debility Sleeplessness Weak Trembling and Nervous Sensations where an invigorating Tonic is indicated. They strengthen the nerves add iron to the blood and supply a want among people who have been humbugged by the lost manhood and debility quacks. This preparation is composed of the purest of drugs and is put up to relieve the mind and body and not to relieve the pocket book

We do not believe it is possible to compound a better remedy than Lewis' Nerve Pills for the relief of these ailments or one that will more quickly restore the strength snap and vigor

PRICE 50¢ A BOX 6 BOXES FOR $2.50 POSTPAID

to consist essentially of an iron salt, strychnin, phosphorus and unidentified plant extractives The trade package recommended these pills for "Nervousness, General Debility, Lack of Energy, Self Distrust, Loss of Memory and Diseases arising from Mental Worry, Overwork, Excesses, etc" These claims were declared false and fraudulent and in October, 1920, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[*Notice of Judgment No 8958, issued May 24, 1921*]

Bick's Daisy 99—A quantity of this preparation alleged to have been shipped by the Palestine Drug Co, of St Louis, was declared misbranded The federal chemists reported that analysis showed it to consist essentially of a solution of sodium acetate and buchu in alcohol and water The presence of extractives of cascara was also indicated It was falsely and fraudulently recommended for the treatment of gonorrhea, leucorrhea, etc In November, 1920, a decree of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[*Notice of Judgment No 8828, issued May 20, 1921*]

Planten's Capsules—In December, 1919, G J Fajardo of New York City is alleged to have shipped to San Juan, P R, a quantity of Planten's Capsules which were misbranded The federal chemists reported that the contents of the capsules consisted of balsam of copaiba The preparation was fraudulently represented as a cure for chronic and acute gonorrhea, gleet, cystitis and all forms of urethritis In August 1920, a decree of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[*Notice of Judgment No 8833, issued May 20, 1921*]

San Methyl—Several packages of this preparation consigned in July, 1919, by the Grape Capsule Co, Allentown, Pa, were declared misbranded Analysis of a sample by the Bureau of Chemistry showed it to consist essentially of copaiba, cubebs, oils of santal and cinnamon, methylene blue and phenyl salicylate It was represented as an excellent cure for gonorrhea, gonorrheal rheumatism, gleet and urethral diseases generally These claims were declared false and fraudulent In October, 1920 judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[*Notice of Judgment No 8725, issued April 27, 1921*]

Pendleton's Vegetable Panacea—A quantity of this product, alleged to have been shipped by the G I Robinson Drug Co, Thomaston, Maine, in March, 1920, was declared misbranded The Bureau of Chemistry reported that analysis showed the preparation to consist essentially of an alcoholic solution of red pepper, camphor, myrrh and oils of spearmint, thyme, cedar and cloves It was falsely and fraudulently represented as a cure for rheumatism, headaches, palpitation of the heart, diphtheria, sore throat, etc In November, 1920, a decree of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[*Notice of Judgment No 8717, issued April 27, 1921*]

Vagiseptic Discs—This preparation alleged to have been shipped in January, 1920, by the Palestine Drug Co of St Louis was declared misbranded Analysis by the federal chemists showed the "disc" to consist essentially of sodium chlorid (table salt) a small amount of alum, sugar, starch and talc It was falsely and fraudulently represented as a remedy for gonorrhea and for "Amenorrhea and other Uterine and Vaginal Disorders" In November, 1920, a decree of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[*Notice of Judgment No 8829, issued May 20, 1921*]

Arthur's Emmenagogue Pills and Leslie's Emmenagogue Pills—The Palestine Drug Co, of St Louis Mo, are alleged to have shipped in January, 1920, a quantity of Arthur's Emmenagogue Pills and Leslie's Emmenagogue Pills These preparations were declared misbranded Analyses of samples of the articles by the Bureau of Chemistry showed that both brands of pills consisted essentially of iron (ferrous) sulphate, aloes, and an unidentified alkaloid They were both sold under the false and fraudulent claim that they were emmenagogues In November, 1920 judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[*Notice of Judgment No 8908 issued May 23, 1921*]

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed Every letter must contain the writer's name and address but these will be omitted on request

SALIVARY AND SERUMAL CALCULUS

To the Editor—Please give the most recent theory as to the cause of the formation of tartar on the teeth and preventive measures

ROBERT WATT M D Philadelphia.

ANSWER—Black, in his 'Special Dental Pathology," gives the results of studies on salivary calculus (tartar) by himself and also by Burchard After an extensive study of the subject, Black was able to prove, by a certain ingenious method for the collection of deposits on teeth, that the quantity of food taken governed the amount of the deposits If one ate sparingly, no deposit was found, if one ate freely much deposit was observed The kind of food ingested made no perceptible difference in the quantity of the deposit

Salivary calculus is always soft when first deposited, later it becomes hard Since the deposits are soft at first, thorough brushing of all parts of the teeth will remove the soft deposit before it hardens The other method, restricting the diet, prevents the deposition A combination of the two is the ideal preventive measure

Serumal calculus is different from salivary calculus The latter is a combination of certain constituents of the saliva micro-organisms and food debris This is grayish and forms on the teeth down to, but not below, the gum margins while the serumal calculus is black and is deposited only on the roots of the teeth below the gum margins The cause for the serumal deposit is unknown, but it is probably some local irritation Both contain lime but the serumal deposit is much harder It is often associated with pyorrhea alveolaris

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA Juneau Sept 6 Sec Dr Harry C De Vighne Juneau
FLORIDA Jacksonville Aug 1 Sec Dr William M Rowlett Citizens Bank Bldg Tampa
NEW HAMPSHIRE Concord Sept 9 10 Sec Dr Charles Duncan Concord

District of Columbia April Examination

Dr Edgar P Copeland, secretary, Board of Medical Supervisors of the District of Columbia, reports the oral and written examination held at Washington, April 12-14, 1921 The examination covered 16 subjects and included 80 questions An average of 75 per cent was required to pass Of the 12 candidates examined, 6 passed and 5 failed Three candidates were licensed by reciprocity The following colleges were represented

College	Year Grad	Per Cent
PASSED		
George Washington University Medical School (1920) 80 1 (1921) 82 3	(1908)	88 8
Howard University	(1920)	77
Cornell University Medical College	(1917)	88 5
University of Pennsylvania	(1919)	90 8
FAILED		
College of Physicians and Surgeons Boston	(1916)	62 2
Kansas City College of Medicine and Surgery	(1920)	32 7
St Louis College of Physicians and Surgeons	(1920)	26 1
Hahnemann Med Coll & Hosp of Philadelphia	(1918)	70 1
Temple University Department of Medicine	(1919)	62 1

College	Year Grad	Reciprocity with
LICENSED BY RECIPROCITY		
Howard University	(1890)	Ohio
University of Vermont College of Medicine	(1896)	Vermont
Medical College of Virginia	(1913)	Virginia

Kentucky May Examination

Dr A T McCormack, secretary, Kentucky State Board of Health reports the written examination held at Louisville May 10, 1921 The examination covered 11 subjects and included 110 questions An average of 70 per cent was required to pass Of the 50 candidates examined 49 passed and 1 failed Three candidates were licensed by reciprocity The following colleges were represented

College	Year Grad	Per Cent.
PASSED		
College of Phys and Surgs San Francisco	(1921)	85
University of Louisville Medical Dept. (1920) 79, (1921) 79 81 81 82 82 83 83 83 83 83, 84 84 84 84 85 85 85 85 85 85 86 86 86 86 86 86 86 87 87 87 87 87 87 88 88 88 88 89 89 89 93 94		
Eclectic Medical College	(1921)	77
Ohio State University College of Homeo Med	(1921)	82
Vanderbilt University Medical Department	(1920)	87
FAILED		
Loyola University	(1917)*	72

College	Year Grad	Reciprocity with
LICENSED BY RECIPROCITY		
Hospital College of Medicine Medical Department Central University of Kentucky	(1903)	Texas
Johns Hopkins University Medical Department	(1913)	Maryland
Boston University School of Medicine	(1905)	Mas

* Fell below 60 per cent in more than one branch

Oregon January Examination

Dr Urling C Coe, secretary, Oregon State Board of Examiners, reports the written examination held at Portland Jan 4 6, 1921 The examination covered 13 subjects and included 92 questions An average of 75 per cent was required to pass Of the 20 candidates who took the physicians and surgeon's examination, 15 passed including 1 osteopath, and 5 failed Of the candidates who took the osteopathic examination 5 passed and 1 failed The following colleges were represented

College	Year Grad	Per Cent
PASSED		
Leland Stanford Junior University School of Medicine. (1921) 85	(1917)	88 9
Chicago College of Medicine and Surgery	(1909)	81
Indiana Medical College School of Medicine of Purdue University	(1906)	82
State University of Iowa College of Medicine	(1897)	80 1
University of Louisville	(1916)	75
Long Island College Hospital	(1899)	80 9
Eclectic Medical Institute Cincinnati	(1891)	71 4
University of Oregon (1918) 81 1	(1919)	82 2
Temple University Department of Medicine	(1920)	78 9
University of Toronto Faculty of Medicine	(1907)	82 1
Western University Faculty of Medicine	(1906)	83 4
University of Naples	(1897)*	79 4
Osteopaths 75 75 75 76 5 77 1		80
FAILED		
Curtis Physio Medical Institute	(1893)*	28 6
Homeopathic Medical College of Missouri	(1900)	63 7
Southwest School of Medicine and Hospital	(1916)	56 1
Columbia University College of Phys and Surgs	(1908)	73 2
Gate City Medical College	(1908)*	52 3
Osteopath	†	

* Graduation not verified
† No grade given

Rhode Island January Examination

Dr Byron U Richards, secretary, Rhode Island State Board of Health, reports the written and practical examination held at Providence, Jan 6-7, 1921 The examination covered 7 subjects and included 70 questions An average of 80 per cent was required to pass Of the 6 candidates examined, 5 passed and 1 failed The following colleges were represented

College	Year Grad	Per Cent
PASSED		
Eastern University of Medicine	(1913)	80 8
Harvard University (1900) 92 8	(1918)	87 3
Jefferson Medical College of Philadelphia	(1917)	87 4
Medical School of American University of Beirut	(1913)*	86 3
FAILED		
Laval University Faculty of Medicine	(1919)	76 9

* Graduation not verified

Book Notices

GROWTH OF THE SOIL. Translated from the Norwegian of Knut Hamsun by W W Worster Two volumes Cloth Price $5 New York Alfred A Knopf, 1921

Knut Hamsum, winer of the Nobel prize for literature in 1920 is the author of numerous novels dramas, essays and poems depicting Norwegian life In Growth of the Soil" he presents an epic the chief plea of which is the call to go back to the land and the simple life The story concerns a simple peasant who goes into the wilds, builds himself a farm marries, raises his family, and through his success attracts to the uncultivated forests more and more people until he establishes a farming community Incidental to the story there are many medical aspects, for Hamsun is a realist and knows that few human lives are untouched by the problems of medicine Thus Inger wife of Isak, chief character of the story, is afflicted with a harelip The great fear of her life is that one of her children will be similarly afflicted At the coming of each child she sends her husband away and delivers herself so that she alone may know the appearance of the infant. Before the coming of the third child, the house is visited by a wandering Lapp who carries with him in a sack a hare poached from the neighboring forest Inger's superstitious fear of a prenatal impression is brilliantly depicted Unfortunately the child born is a female infant likewise afflicted with a harelip Inger commits infanticide and buries the infant The story details her subsequent arrest and considers the Norwegian law which condemns her to a long prison sentence Again a social side of the question is touched since her life in prison is the determining factor in her future In prison she comes in contact with modern medical science The harelip is cured by a plastic operation She also receives instruction in reading, writing and many household arts which make her a better partner in the building of the family when she returns

The author also shows how city residence gives an outlook on life which causes the city dweller to look down on the simple peasant As the community grows and new persons come in life becomes more complex An insight is afforded into the jealousies and difficulties of intimate country life. Another woman, familiar with city life, returns to the country and takes up an occupation with one of the farmers in the neighborhood She too, commits infanticide. In her

case, however, a number of persons become interested When the case is tried the wife of the district superintendent makes a brilliant address which results in her acquittal It is in this address that the author preaches his views regarding the attitude of society to the unmarried mother The address is dramatic and one of the strongest pleas for equal responsibility of the father that one can find in modern literature

Novels of the type of the "Growth of the Soil" are as instructive as many nonfictional works, and have the added advantage of intense interest

THE ANATOMY OF THE NERVOUS SYSTEM FROM THE STANDPOINT OF DEVELOPMENT AND FUNCTION By Stephen Walter Ranson M D Ph D Professor of Anatomy in Northwestern University Medical School Chicago Cloth Price $6 50 Pp 395 with 260 illustrations Philadelphia W B Saunders Company, 1920

In this volume, Ranson presents the anatomy of the nervous system from the dynamic rather than the static point of view Recognizing the difficulty of teaching by structural details alone, he points out their functional significance as well, in doing this he lays the foundation for physiologic and clinical neurology The descriptions are comprehensive, accurate, easily understood and not burdensome The subject matter includes the recent, important contributions to the science of neurology Where disputed points occur, the author's name and date of his contribution appear, a full list of these references and the literature is included in a bibliography Among recent contributions to neurology with which the neurologist is familiar may be mentioned the work of Ingvar on the cerebellum The spinal paths for sensation are clearly described and clinical research on this subject is utilized The extrapyramidal motor system is described and its relation to clinical neurology noted The original illustrations of dissections assist in no small way in making the subject interesting and lucid Special note may be made of the internal configuration of the cerebral hemispheres Considerable original work is referred to in the sympathetic nervous system The laboratory outline of neuro-anatomy is practical The index is complete and lends itself readily to efficient guidance The volume is an excellent textbook and a good reference handbook

LEHRBUCH UND ATLAS DER AUGENHEILKUNDE Bearbeitet von Prof A Elschnig Prof R Greeff Prof L. Heine Prof E Hertel Prof L. v Hippel Prof E Kruckmann Prof J Oeller Prof A Peters and W Stock Herausgegeben von Dr Theodor Axenfeld Professor der Augenheilkunde in Freiberg Sixth edition Cloth Price 78 marks Pp 840 with 650 illustrations Jena Gustav Fischer 1920

Evidently the quality of glue used in the German binderies is sadly below that of former years, judging from the rapidity with which this textbook fell to pieces But this defect is more than made up for by the good printing and evidences of careful proof-reading throughout (only two errors were noted), and completely overshadowed by the excellence of the illustrations The latter far surpass the standards set by the higher class textbooks although, in a few instances, the plates are not sufficiently illustrative of the matter in hand The photomicrographs are uniformly good and the fundus illustrations by Oeller live up to the reputation he established some years ago Many of the newer phases of ophthalmology are considered at length and fully discussed, even though they have not been universally accepted For example, parenteral injections of milk are still considered by Axenfeld as being on an experimental plane The slit lamp of Gullstrand is described but the enthusiasm of the workers with that instrument is not reflected among these pages But in every chapter, the most modern accepted concepts of diseases of the eye and the treatment are dealt with in a comprehensive manner The American ophthalmologist will disagree with the views in several phases which, in this country, are considered of major importance The art of retinoscopy is dealt with in a very stepmotherly manner by Axenfeld, and refraction as a whole does not receive the consideration that our own textbooks give it Again, the etiology of ocular disease of other than local origin is not given the attention that American ophthalmologists are wont to employ There are several chapters that stand out supreme That on the conjunctiva, by Axenfeld, is a masterpiece, and every sentence deserves careful study He stresses the falsity of the older conception of pinguecula and emphasizes the fact that it is not composed of fat, but is a localized hypertrophy (even to hyaline thickening) and is due to irritation through the palpebral aperture The chapter on the cornea, by Elschnig, is equally good and contains lucid descriptions of corneal conditions Greef contributes the chapters on the retina, and the optic nerve and visual tract These are very well written and complete, and the etiologic phase of diseases of these structures is elaborated on far better than in other chapters The chapter on injuries, both civilian and war, by Hertel, contains a short, but excellent treatise on sympathic ophthalmia, and is concluded by a short discussion of the question of compensation for ocular injury Heine closes the text with a compilation of the possible ocular complications of systemic disease Taken by and large, this may be considered as one of the best textbooks of ophthalmology that has appeared To the student, it presents a lucid picture of ocular disease, to the general practitioner, it lends a diagnostic and therapeutic hand in puzzling conditions, and to the ophthalmologist it offers an excellent modern concept of ocular disease, one that will bear rereading

ELEMENTS OF HYGIENE AND PUBLIC HEALTH FOR THE USE OF MEDICAL STUDENTS AND PRACTITIONERS By Rai Bahadur Jaising P Modi L R C P & S L F P S Lecturer on Medical Jurisprudence King George s Medical College Lucknow With an Introduction by Lieut Col E J O Meara F R C S D P H Second edition Cloth Price, 12 shillings net Pp 497 London Butterworth & Co 1920

This is an interesting book written for use in the medical colleges of India by an experienced teacher and health officer All the phases of public health work usually treated in a book of this character are touched on, but particular stress is laid on subjects of special interest in India The author is apparently more familiar with English than with American methods in sanitation For example, the brief paragraph on chlorination of water supplies contains no mention of the use of liquid chlorin We cannot agree with some of Dr Modi's inferences with respect to air-borne infection, particularly that regarding sewer air as a factor in the spread of disease Also the subject of room disinfection following contagious diseases is treated from a point of view fast disappearing among up-to-date American health officers In general, however, the subjects are adequately and sanely treated A few discussions of particular interest might be mentioned For example, the chapter on personal hygiene portrays living conditions which are found rarely, if at all, in this country The subject of malaria is unusually well treated, as are also plague and cholera The book is a valuable contribution to the literature on public hygiene in tropical countries

THE GENUINE WORKS OF HIPPOCRATES Translated from the Greek with a Preliminary Discourse and Annotations Two volumes in one By Francis Adams LL D Extra muslin Price $5 Pp 366 New York William Wood & Company

The publishers have reissued under one cover the two volumes of the original translation by Francis Adams of the Works of Hippocrates This is a well known translation, copiously annotated, originally published under the auspices of the Sydenham Society The name of Hippocrates stands next to that of the mythical Esculapius as the father of medical science All who presume to follow medical science should be familiar with his work, if he had written only the first of his famous aphorisms he would have contributed enormously to medical science

Life is short and Art long the occasion fleeting experience fallacious and judgment difficult The physician must not only be prepared to do what is right himself but also to make the patient the attendants and externals cooperate

MOTHER AND CHILD By Edward P Davis A M M D Professor of Obstetrics in the Jefferson Medical College Fourth edition Cloth Price $2 75 net Pp 278 with 33 illustrations Philadelphia J B Lippincott Company, 1921

This well known book has been revised and brought up to date by the author, and numerous well-chosen illustrations have been added It is a valuable book for the aid of mothers especially, the part assigned to the child Mothers will find all the information they may need on the care of the child, such as the feeding and the treatment of diseases incident to childhood

Miscellany

THE OFFICE OF IMPERIAL PHYSICIANS, PEKING*

E V COWDRY, PH D
NEW YORK

Admission to the Office of Imperial Physicians was obtained through the kindness of the emperor's tutor, Mr R. F Johnston, who gave me a card of introduction to Mr Ch'i Ling, a minister of the household Mr Ch'i received us in his yamen with great courtesy and made arrangements with the director of imperial physicians for our proper reception My thanks are also due Mr Ma Kiam, of our Department of Chinese, who with his intimate knowledge of Chinese classics, has helped me immensely

The sentry in a gray uniform, taking it easy at the entrance, is symbolic of the respect with which the present republican government seems to regard all monarchical institutions (Fig 1) On Chinese New Year, and other festal occasions, the president or his representative, calls on the emperor in his palace in the Forbidden City The emperor is said to receive from the republic $4 000 000 Mexican a year as an honorarium in consideration of his partial abdication A few heads are lopped off after each attempt at restoration and the emperor continues to be treated with deference From his private purse he maintains the Office of Imperial Physicians and several other Manchu organizations and yamens The rebuilding and elaborate decoration of these offices, after their destruction by foreign troops during the Boxer uprising in 1900, is indicative of the tenacity with which the Chinese cling to their traditions

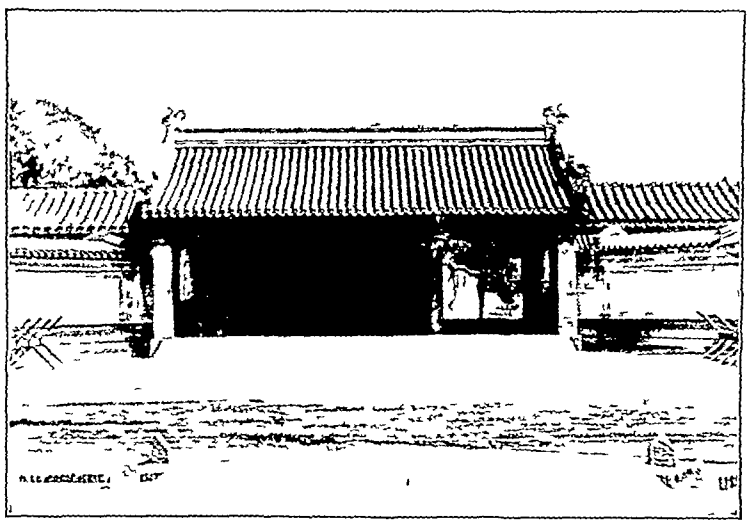


Fig 1.—The sentry in gray uniform resting at the entrance symbolizes the respect with which the present republican government regards all monarchical institutions

Visitors are usually received at the entrance and are conducted through spacious court yards to the library, where tea is served and the usual compliments are exchanged The official textbook called the "Golden Mirror" occupies a place of honor on the central table (Fig 2) It was written under the supervision of the Emperor K'ang Hsi (1661-1722 A D) from originals attributed first to the Han Dynasty (206 B C to 220 A D) and still earlier to the mythical Yellow Emperor (2696 B C), who is considered to be the father of Chinese medicine Perhaps no other medical book has held its popularity through so many centuries Even today, about two hundred million Chinese are content to be treated in accordance with its dictates, so that in a very real sense, it is for them an arbiter of life and death

It consists of eight large volumes in Chinese cases covered with blue cloth Each volume contains from six to twelve books bound in imperial yellow It teaches that the air passes through the larynx to the heart and other palpable absurdities Turning over the pages, we come upon many interesting drawings indicating different disease conditions such as the 'grain pustule sickness' (erysipelas) in children and in adults There are also charms and mystic diagrams in profusion The 'Sixty Year Cycle of the Forces of Nature' is very popular Diagrams illustrating the relation between masculinity and femininity are not only of common occurrence in the "Golden Mirror" itself but are used as symbolic decorations in many of the buildings

After leaving the library, visitors usually inspect some native drugs in an adjoining room and then pass through the north court, reception hall and south court to a small shrine where a large brass statue is kept A suitable gratuity to one of the attendant coolies results in the speedy removal of all the clothing the altar and sacrificial vessels so that the acupuncture holes may be closely examined (Fig 3) The girdle about its loins is pure camouflage because all the external genitalia are omitted in deference to Chinese antisexual feelings The holes indicate the proper places for the insertion of needles in various diseases, the idea being that all ailments are due to an improper association between the various circulating male and female principles which consequently require liberation In the Golden Mirror [1]

"Life is said to depend on the action of a female-principle which embraces a male-principle These principles are opposite powers of vigor or strength which are equal in weight When they are properly balanced there will be no disease of any kind and the person will be productive and healthy These principles are distributed quite differently in the body The exterior is male and the interior is female, the back male and the abdomen female, the viscera male and the parenchymatous organs are female Each principle has three degrees in quality, namely great female principle, female principle proper and young female principle, great male principle, male principle proper and young male principle These three degrees of principle are evenly distributed in their respective organs and viscera "

Miniature statues of this kind are used in China for instruction in different ways We read that one method is to cover the body with a layer of paraffin and paper, to fill it with water and to let the novices try their skill at locating the holes with needles If they are successful, the water gushing forth typifies the liberation of male and female principles from the living body But very little, if any instruction is now given in the Office of Imperial Physicians Images are worshipped, not used good food is offered and cheap incense burned lavishly

From this small shrine we are led to a large temple, at the entrance to which some of the officials consent to group themselves for a photograph (Fig 4) Within the temple, large gilt images of the Emperors Huangti, Fuhsi and Shennung

* From the Anatomical Laboratory Peking Union Medical College

1 From a translation (or paraphrase) of a portion of the Golden Mirror by E T Hsieh A Review of Ancient Chinese Anatomy, Anat Record 20 101 1921

are worshipped during the spring and autumn festivals Shennung and Fuhsi are thus idolized because they are credited with the invention of writing, about 4,000 years ago Huangti is even more highly venerated since, in addition to being the father of Chinese medicine, he is also supposed to have invented clothing, as may be seen in the accompanying photograph (Fig 5)

In these imperial offices, 110 physicians are registered (March, 1921), none of whom have any foreign training Two of them visit the Emperor Hsuan Tung in the Forbidden City about twice a week and make prescriptions when necessary One can imagine the deference with which they approach the "Son of Heaven" and the solemnity with which they beg him to take spirit pills (tapeworms soaked in children's urine) or some other remedy popular for at least a thousand years It is said that the emperor is not permitted to seek the advice of foreign trained physicians, but I have been unable to confirm the statement

The visit helps to give us a true conception of the difficulties which have to be overcome in the introduction of modern medicine into China The book of authority, the idolization of leaders long since dead and the complete satisfaction with present conditions, are obstacles to progress which have to be reckoned with No wonder that "a modern chinese anatomist" expresses himself thus quoting from John Dudgeon s (1919) translation [3]

"If I do not, however, speak there are many diseases whose origin cannot be known, so I cannot but speak out Not only do the medical books assert that memory and mind come from the heart but the learned, in treating of reason virtue and conscience all say that intelligence and memory are located in the heart, because at the beginning people did not

Fig 2 —The official textbook called the Golden Mirror occupies a place of honor on the central table

know what the heart governed, they knew that it lay in the chest, they did not know that at the two sides of the larynx and gullet there are two air vessels, which at the front of the lungs unite to form one vessel which enters the heart, then it goes out of the left side of the heart, passes the lungs, and enters the spine This is the wei-tsung vessel In front it connects with the ch'i-fu and spermatic road, behind with the spine, above with the two shoulders, in the middle with the two kidneys, and below with the two lower extremities This is the vessel that preserves the original or vital air and juices

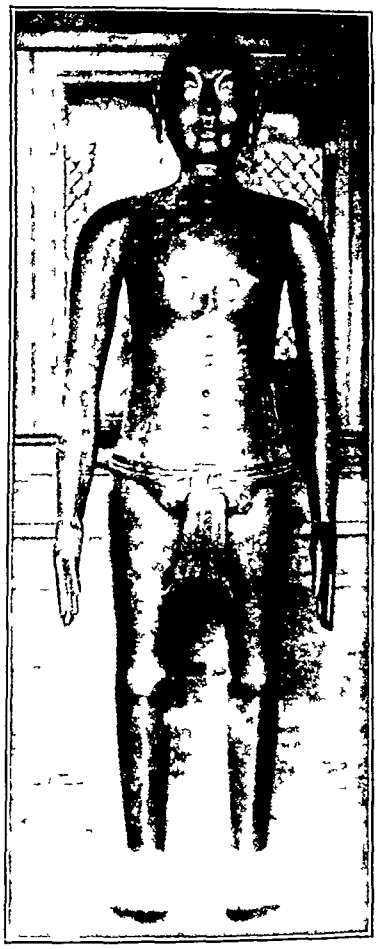


Fig 3 —A suitable gratuity to one of the attendant coolies results in the speedy removal of all the clothing the altar and sacrificial vessels so that the acupuncture holes in the statue can be closely examined

This air goes out and in the heart, how then can the heart produce mind and store up memory? Why do I say that the mental qualities are in the brain because food and water produce air and blood which grows the flesh, the pure delicate juice is converted into marrow which advances by the spine and so up to the brain and therefore is called nao sui (brain marrow)

'In regard to the nature of the pulse, what I inform posterity is the truth, if there are those who speak or write not according to what they know or believe and assert themselves to be genii and do not conscientiously discourse of things they must suffer punishments at the hands of Heaven

'The ancients did not know that the pulse was the air vessels although they discoursed on a great variety of pulses and their positions, in which every man was different They said there were twenty-seven characters of sorts and I dare not say they were wrong in their doctrine of the pulse, not because they have not a leg to stand upon (in Chinese no footing for their views) but because posterity in their treatment of disease would have no doctrine of the pulse to go upon By feeling the pulse and knowing whether a person is going to live or die is easy, but to decide on the disease is difficult

"Lang Chai opposed my view He said the hearts of animals contained blood why is it that man's contains none? I replied by asking him what animals' heart contained blood? And he replied that in ancient prescriptions there is mentioned the sui-sin-tan pills taken to cure madness These pills are made of a species of Wickstraemia (kan-sui) ground to powder and mixed with pig's blood and thereof the pills are made, and is this not proof that the pig s heart contains blood? I replied that this was an error of the ancients, it was pig's blood but not out of the heart When the heart is cut with a knife the blood in the heart comes from the cut walls of the chest, and if the heart be not cut there is no blood within it

'If persons do not read and study books and think by reading mine to have sufficient knowledge, that is not my fault but their own "

2 The ritual is described in detail by de Harlez Mem Acad roy d sc de Belg 51 417-426 1893

3 Dudgeon, John A Modern Chinest Anatomist and Other Discourses Nat M J of China 5 50 1919 (Unfortunately, Dudgeon does not give the original Chinese references)

The fundamental problem is 'the transformation of the mind of China," to use the title of one of Professor Dewey's papers recently published in *Asia,* for the same causes hold back development in many lines Dissatisfaction with the past and present, and a reaching out of the nation as a whole for improvement, are the first essentials The Chinese intellect is certainly not inferior to the Japanese What holds them back is their reluctance to get together and stick together on a national basis in some constructive program which involves a certain measure of idealism coupled with a willingness to forego undue profit That they are able to do so is shown by the coherence of business guilds and certain industrial enterprises

The beginning which has been made in the organization of federal and provincial medical schools is worthy of the highest praise, but they are like houses built upon the sand' with no stability, subject to every passing storm of revolution and political intrigue Their success and very existence usually depend on the health and strength of their director They are in other words 'one man institutions" China has been a monarchy for so long that the people have not learned the efficacy of sharing responsibilities 'A virtuous ruler is like the pole star which keeps its place, while all other stars do homage to it"[4]

The consequences are serious When the director becomes indisposed or receives some other appointment, the faculty are helpless because they have taken no part in the organization and do not command the respect and confidence of the federal or provincial authorities, so that the whole enterprise is in danger On the apppointment of a new director a radical change in policy may be expected with failure to abide by the spirit and letter of agreements made by the first incumbent One college has had to close its doors in the absence of its director in another the members of the faculty are dependent on the personal influence of their director with the government for securing their salary from month to month

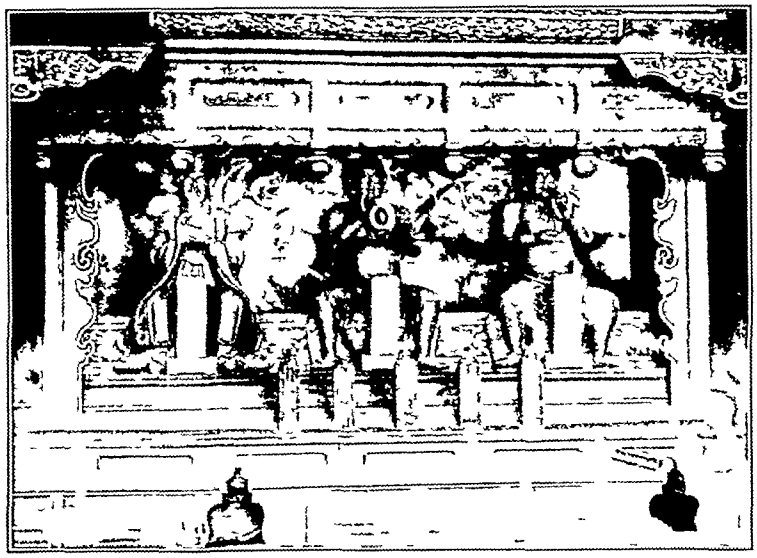


Fig 3—Within the temple large gilt images of the Emperors Huangti Fuh i and Shennung are worshipped during the spring and autumn festivals

In order to maintain continuity of effort and business-like efficiency, the director must learn to share his responsibility with members of the faculty This if he is the right kind of man he will gladly do Does not Confucius say, 'The distinguished man is anxious to put himself below others" He will be happy in seeing his institution firmly established through careful organization and the deputation of authority to others With the success of the college at heart, he will find it no hardship to retire a little from the limelight, for it cannot be denied that the outlook of a single individual is narrow compared with that of a small but representative group which is actually doing the work of the college A single individual is likely either to make hasty decisions or to procrastinate, to be influenced by personalities by indigestion and other factors from which a group being a collection of units is immune Group action is more conservative more broadminded and more permanent an interregnum can be more easily bridged over and coherent team-work made possible

Fig 4—One is led to a large temple at the entrance to which ome of the officials consent to group themselves for a photograph

As the members of the faculty gradually come to a realization of their own personal responsibility for the success of the institution as a whole their interest increases and *esprit de corps* develops Individual loyalty to the director is overshadowed by devotion to the institution and to the ideals for which it stands Directors will come and go, but it is hoped that institutions founded by the Chinese will become permanent national assets

Some Chinese shoulder their responsibility bravely and press on as true pioneers, but how small is the minority and how overwhelming the inertia of China! To strengthen these leaders is the aim of every one who has China's interest at heart

It will not be an easy task Real advances in medical education cannot be expected before a sound and just government has been established responsibility for which rests fairly and squarely on the shoulders of the Chinese people It is unfair to cast all the blame on the official class because after all the officials are Chinese and continue to hold office through the tolerance of other Chinese The government of

4 Giles Lionel The Sayings of Confucius The Wisdom of the East Series, London, John Murray 1912 p 39

any country is just as good, or just as bad, as the people deserve

Lao Tzu's doctrine of inaction,[5] "Leave all things to take their natural course and do not interfere," has entered into the very fiber of the nation during centuries of famine, flood and plague, and it has bred a colossal indifference How opposed it is to the old English motto, "Time and tide wait for no man!" The disciple Tseng Tzu said of Confucius[6] "Our master's teaching simply amounts to this 'loyalty to oneself and charity to one's neighbor'" Self first and the other fellow next individualism before nationalism The leaders of young China would do well to instil the nation generally with some of the strong Roman patriotism, expressed in the words "Dulce est pro patria mori," at the same time being careful not to create the dangerous Prussian feeling that 'the state can do no wrong" This change cannot be accomplished at a wave of the hand, but those who have acquired a slight knowledge of China through two or three years' residence, as well as others born and bred in China almost without exception, express faith in the ability of the Chinese people to work out their own salvation with foreign encouragement but not foreign control

In his most recent article (May, 1921) Professor Dewey says "It is no wonder that wherever a few are gathered *together in China, the favorite indoor sport is 'saving China'*" It is to be hoped that the day is not far distant when this "sport" is not only indulged in by foreigners with a sprinkling of Chinese but can boast of some slight popularity among the masses of the Chinese themselves without foreign influence There is truth in the saying that "where there is a will there is a way" At present the 'will' is lacking in the great masses of population who count for so much

Medicolegal

Evidence of Performance of Other Abortions

(State v Bassett (N M) 194 Pac R 867)

The Supreme Court of New Mexico says that the defendant was convicted of murder in the second degree under a statute which provided that every person who should administer to any woman pregnant with a quick child any substance, or use any instrument or other means, with intent thereby to destroy such child, unless it was necessary to preserve the life of the mother, should, in case the death of such child or mother should be thereby produced, be guilty of murder in the second degree The prosecuting witness testified that at the time the abortion occurred she was pregnant with a quick child, and that the pregnancy had progressed about six months The defendant admitted that he aborted the woman but contended that at the time she went to his sanatorium and he made his first examination of her the fetus was dead, and that it was necessary in order to save her life and in accordance with correct medical practice, to remove the fetus with instruments which he did But the woman was allowed to testify over his objection that some months later she again visited his sanatorium and that he there performed another abortion on her when she had been pregnant about two months The district attorney explained that this testimony was to show the intent with which the defendant committed the first abortion That brought up the question of when and when not, in cases of this kind, evidence of other abortions is admissible in the prosecution for the given particular act The court hesitates to depart from what appears to be the current of authority on the subject but it cannot but be convinced that there was an entire lack of relevancy of the proof offered of the second abortion in this case It did not tend to prove that the woman was aborted on the first occasion unnecessarily and when it amounted to murder of a human being Wherefore it is held that the evidence of the second abortion was inadmissible, and the judgment of conviction is reversed, with directions to award a new trial In other words the court holds that, under the statute, the gist of the offense was the intent to murder a quick child by means of aborting the mother, and, in a prosecution under that statute, proof of other abortions on women wherein the child had not quickened was not relevant, and should be excluded If there was no quick child in the woman's womb when the abortion was resorted to, there was no crime under the statutes of New Mexico, as they existed at the time of the occurrences in this case How, then, could it be said that producing an abortion on a woman pregnant, but when the fetus had not yet quickened, would tend in the remotest degree to show that a physician would deliberately commit murder of a quick child still in its mother's womb? The acts in the two cases are entirely distinct and dissimilar One involves murder, the other involves nothing more than a disregard of the finer feelings of humanity with which the law, in the absence of statutory regulation, is not concerned If it had been shown that the defendant had aborted other women pregnant at the time with quick child, the evidence would undoubtedly have been admissible That would have tended to show that the defendant when he aborted the prosecutrix, intended to commit murder by the use of instruments on the mother, and that he probably did not as he testified, abort her for the purpose of preserving her health, or possibly her life

Federal Court Upholds State Law and Board

(Lindsey Allen et al (U S) 269 Fed R 636)

The United States District Court, in Massachusetts says that this was a bill in equity brought against the attorney general two district attorneys, and the members of the board of registration of that state The board was established by an act approved on June 7, 1894 By Section 3 of the act every person who had been a practitioner of medicine continuously for a period of three years next prior to the passage of the act was entitled to registration and a certificate on payment of a fee of one dollar, but by Section 8, on and after Jan 1 1895, all applicants were to be examined The bill alleged that the plaintiff had practiced medicine for more than eight years before the passage of the act calling himself Dr and M D and that he did not know of the statute until January 1898, and then tendered a dollar to the board and demanded a certificate, which was refused It also alleged that he continued to practice without molestation until 1914 and had discovered remedies of which it is enough to say that they were alleged to cure tuberculosis blood cloes fistulas gallstones and syphilis Since 1914 he had been convicted several times of practicing medicine without a license etc and in one case was discharged on entering into a stipulation 'to never again engage in the illegal practice of medicine"

The court considers that the charges of malice and improper motives against the board were immaterial even if otherwise sufficient because, whatever may have been the animus of its members it was its plain duty under the statute to refuse a demand for a certificate without examination when the demand was not made until 1898 Section 8 limited the operation of Section 3 and even if the time allowed was short, the plaintiff was not entitled to wait three years As to the prosecutions it seems that the plaintiff was guilty under the act, and here again the motives for instituting them were immaterial It was alleged that the board permitted others to practice who had never passed an examination, but nothing appeared to show that the act was administered in an unconstitutional way The court perceives no valid ground open on the bill for contesting the constitutionality of the act As to the plaintiff's right to call himself M D and to practice medicine, it is enough to say that the law gave him a fair chance to preserve the supposed rights and that he let it go by Whether M D does not convey

5 Giles Lionel The Sayings of Lao Tzu The Wisdom of the East Series London John Murray 1917 p 32

6 Giles Lionel The Sayings of Confucius The Wisdom of the East Series London John Murray 1912 p 118

the implication that the person affixing those letters to his name has received a degree from an authorized source and therefore was in this case a fraud in contemplation of law, the court need not consider The exception from the operation of the statute of some classes of practitioners that many people would regard as swindlers does not go beyond the right of the state to have its own convictions and its own policy and to embody them in law

In view of what the court has said, it is enough to add that at least there is no such clear infraction of the plaintiff's rights or impediment to his asserting any defense that he may think he has under the constitution of the United States if he is indicted again as to warrant this court's interfering with the regular processes of justice in the state There is no deterrent The stipulation above mentioned, even if it was more than an understanding outside the record, which did not appear, would present no obstacle to any defense on a new indictment, probably would be disregarded for all purposes if the statute should be held unconstitutional and whatever its effects was the act of the plaintiff, not of the statute If this bill should be entertained, any criminal might seek an injunction in the courts of the United States to prevent the regular administration of the state laws whenever a question as to their constitutionality could be raised Here however the court sees no ground for even a reasonable doubt that on the question before it the act was within the power of the state Motion for injunction denied Bill dismissed with costs

Diagnosing and Treating Diphtheria as Quinsy

(Clark George (Minn) 180 N W R 1011)

The Supreme Court of Minnesota in reversing an order that denied a motion for a new trial after a verdict had been directed in favor of the defendant, says that a physician is not ordinarily liable for error of judgment in a doubtful case He does not insure either correct diagnosis or correct treatment, but he is required to possess the skill and learning which are possessed by the average member of his school of the profession in good standing in his locality, and to apply that skill and learning with reasonable care If he fails in this he is negligent and may be held for injury resulting therefrom

The plaintiff's wife, 34 years old, was taken ill one evening Her throat was sore and swollen and her temperature somewhat above normal The defendant diagnosed her case as quinsy, lanced her throat first on one side and then on the other, said probably some pus would come and that she would be better in the morning In the morning he asked whether any pus had come and was told by the patient that none had He lanced her throat again She could not speak above a whisper, but asked him to look at her husband's throat He did so and immediately said, "You have diphtheria, and that is what is the matter with her" He then took a culture went away, and in fifteen or twenty minutes came back and again pronounced the patient's case as diphtheria He then changed his treatment and administered antitoxin but the patient died on the following day He made a death certificate, stating that the cause of death was diphtheria with general edema of the pharynx In a memorandum submitted to the health department with the culture on the day before her death he gave the diagnosis as suppurative tonsillitis From the statement in the death certificate and all the other testimony in the case the court thinks that a jury might fairly infer that the patient was suffering from diphtheria from the beginning and that it was doubtful whether they could infer that there was any other ailment A physician who was called as a witness testified that it was not good practice to lance a throat infected with diphtheria as it would spread the infection through the system, and that in his opinion the operation was a contributing cause of death If the foregoing testimony stood alone the court thinks there would be no question of its sufficiency to sustain a verdict that the defendant was negligent both in the manner in which he proceeded to diagnose the case and in the treatment administered The doubt in the case arose from the fact that a sister of the patient when asked whether any pus came out at the time of the first lancing, answered, 'A little," while the expert witness mentioned testified that it was always proper to lance a pus abscess, even if diphtheria was present However, notwithstanding this testimony the court is of the opinion that the question of the defendant's negligence was for the jury Under the evidence, the testimony of the sister was not conclusive of the existence of a pus abscess, while the testimony of the expert witness was to the effect that even if there was a pus abscess the lancing of the throat on the second morning was not good practice A jury could infer that the defendant should have known on the occasion of the second call that his first diagnosis must have been wrong and that to lance again might bring disastrous results

It was incumbent on the plaintiff to prove that but for the negligence of the defendant death would not have occurred If the evidence left the cause of death a matter of conjecture the defendant was entitled to a directed verdict The plaintiff was however, not required to prove causal connection by direct evidence If circumstantial evidence furnished a reasonable basis for the inference that the negligence of the defendant was the cause of death, the case should have been submitted to the jury In view of the natural tendency of the lancing to spread infection and of the evidence that the patient died of sepsis or infection in so short a time thereafter the court is of the opinion that the jury might infer that the proximate cause of death was the surgical act

Two members of the court dissent saying that when the defendant called at midnight to treat the patient he was informed that she was subject to attacks of quinsy, that there was no evidence that would justify a finding that after he called proper diagnosis and treatment could have saved the woman's life and that unless medical skill could have prevented death, he should not be held in damages

Knowledge and Fraud of Medical Examiner

(Hale Sovereign Camp Woodmen of the World (Tenn) 226 S W R 1045)

The Supreme Court of Tennessee, in affirming a decree in favor of the beneficiary where there was a controversy as to whether the insured or the local medical examiner of the defendant had given it incorrect information, says that it has held that the knowledge of the local medical examiner of a fraternal benefit society was imputable to the society in a case in which the true facts concerning the physical condition were stated to the examiner and he inserted false statements in the report of his examination made to the society it being deemed immaterial that the application recited that the local physician should be treated as the agent of the applicant While there is some authority to the contrary this rule as to the knowledge of a local physician being the knowledge of his principal, the assurer, is almost everywhere accepted Under these authorities where the applicant for insurance truthfully answers the questions propounded to him by the local physician of an insurance company or a fraternal benefit society issuing insurance and the physician inserts false statements in the blank furnished him and makes a false report to his principal, and a policy issues the assurer is held to be estopped from relying on such false report This is for the reason that the agent of the assurer employed to procure this information was truthfully advised by the assured Such knowledge having been acquired by the special agent in the execution of the special authority he possessed this knowledge will be ascribed to the principal The principal therefore, having knowledge of the truth, will not be permitted to rely on the fraud of its agent for which the assured was in no way responsible Nor does the court see any difference in the application of the rule of law in a case in which the local agent has been guilty of negligence and in a case in which he has been guilty of actual fraud The basis of the liability of the assurer in such cases is the knowledge of the special agent acquired within the particular line of his duties with which knowledge the principal is charged It can make no difference whether the general officers of the assurer are misled inadvertently or intentionally by the local agent

Society Proceedings

COMING MEETINGS

American Electro Therapeutic Association Washington D C Sept 7 10
Colorado Congress of Ophthalmology and Oto-Laryngology Denver July 29 30
Colorado State Medical Society, Pueblo Sept 6 8
Delaware State Medical Society, Rehoboth, Aug 16
Minnesota State Medical Association Duluth Aug 24 26
Utah State Medical Association, Salt Lake City, Sept 13 14
Washington State Medical Association, Seattle Sept 2 3
Wisconsin State Medical Society of Milwaukee Sept 7 9
Wyoming State Medical Society Casper Sept 6 8

AMERICAN PEDIATRIC SOCIETY

Thirty Third Annual Meeting held in Swampscott Mass June 2 4 1921

(Concluded from page 227)

Studies of Anaerobic Bacteria in the Infant's Intestine

DR LANGLEY PORTER, San Francisco Our work indicates that the anaerobic flora of the infant's stools is relatively simple, probably made up of a few types, the most prominent being *B welchii, B bifermentans, B sporogenes,* and a terminal end-sporulating organism of the tetanus amorphous group Probably, the first anaerobe to develop in the infantile intestinal tract is *B bifermentans* One group of infants was fed on breast milk, using three supplements (1) sterile water, (2) Ringer's solution and (3) saccharin water Another group was kept on modified cow's milk, also using the three supplements The stools of the babies fed on breast milk showed the typical aciduric *B bifidus* flora, while those fed on modified cow's milk showed a flora of more complex nature, approximating a semiputrefactive flora From clinical observations it has seemed that there might be a relationship between the intestinal flora of the mother and that of the child with special reference to the presence of *B welchii* Our observations failed to confirm this belief While *B welchii* has been found in all types of stools, normal, putrefactive and saccharolytic, there was a very great difference in the numbers of this organism found in each case, and it is possible that further studies might show these quantitative differences to have some chemical significance The symbiotic relationships of aerobe to anaerobe is one of interest It may be that certain symbioses promote the growth of anaerobes whose by-products are harmful

DISCUSSION

DR J H MASON KNOX, Baltimore Some years ago Dr Porter and I made a short investigation of normal children in the attempt to find whether the gas bacillus was present in the intestines of infants We found that practically all the infants in the maternity ward showed *B welchii,* not only microscopically but by inoculation in rabbits It took a week or ten days for young babies to develop this bacillus in the stools It is widely distributed in nature and takes that time to become general in the infant's intestine

The Four Hour Nursing and Feeding Interval

DR THOMAS S SOUTHWORTH New York The four hour nursing interval has proved helpful within limits, but is too sweeping for universal application It seems to be admirably adapted to the vigorous normal infant at full term nursing a normal mother with an abundant supply of good breast milk The longer interval has proved distinctly superior when there is tenderness of the mother's nipples with risk of infection and mammary abscess and in cases of over rich high fat breast milk It is especially adaptable to cases that depart from the normal, in short, to cases of maladaptation Adopted too enthusiastically, as a routine, it works injury to other important types of maladaptation Premature infants require more frequent feeding than those born at term Of full term infants there is the sluggish, dormant infant with difficulty stimulated to take a sufficient quantity of breast milk in five nursings, there is the baby who is too weak or learns with difficulty to take the nipple and does not empty the breast, the nervous and inexperienced mother who does not know how to cooperate with the baby and defeats its efforts, there is finally the large and perhaps increasing number of mothers whose breast milk, while scanty and insufficient, is capable of being made abundant enough to establish maternal nursing, wholly or in part, if stimulation is maintained with adequate frequency For these cases the four hour interval is irrational and injurious Complemental feedings given at the conclusion of a nursing to make up deficiency in breast milk are always justifiable when occasion demands and should be employed more frequently, but the substitution, ignorantly made, of one or more bottle feedings to take the place of the already too infrequent breast nursings is the most scientific way of drying up breast milk and precipitating unnecessary weaning In many instances complemental feedings, coupled with a return to shorter intervals produce the best results

The Effect of Compressed Yeast in the Food of Infants

DR MAYNARD LADD Boston The food for an infant must contain the fat-soluble A, water-soluble B and C antiscorbutic vitamins, and in sufficient amounts There is a possibility that the conclusion reached as a result of feeding these vitamins to laboratory animals may be applied too directly to infants Milk is not a natural food for these experimental animals, except for very limited periods, if at all In view of the advertisements in some medical journals and the fact that certain commercial firms are taking advantage of the present interest in vitamins to put into the hands of physicians and of the public generally products which, on the basis of animal experiments, were recommended as valuable growth promotors for the human infant, there is danger that the general practitioner will be directed away from the principles of sound and scientific feeding The ten babies in our series were all difficult feeders, and they were carefully observed for different periods The weight charts give evidence of satisfactory development, but careful analysis of the rate of weight development during the periods with yeast and without yeast do not show any benefit that can be attributed to the yeast itself One child developed furunculosis while taking the yeast, obviously from contact with a baby similarly affected, and in that case it had no prophylactic value Ill effects were observed in one baby that developed a severe fermentative diarrhea soon after the yeast was begun later, when this was corrected it took another dose with no bad effects, but still without benefit to its nutrition

Abdominal Pain and Throat Infection

DR JOSEPH BRENNEMANN, Chicago Abdominal pain occurs often to the exclusion of all other subjective symptoms in the course of throat infections in children, including the whole series of upper respiratory tract infections Inflamed and enlarged mesenteric and retroperitoneal glands, nontuberculous in origin, occur in infections having their primary seat in the throat The pathogenesis of such enlarged glands is a matter of speculation, as is also the question as to whether they themselves cause the abdominal pain The true cause of the pain may be, at least in part, a localized enteritis or colitis rather than lymphadenitis itself, and possibly some specific or selective localization may account for the fairly constant pain in the umbilical region

Protein Requirements for Children

DR L EMMETT HOLT and MISS HELEN FALES New York The total protein requirement is, to a large extent dependent on the character of the protein given Proteins differ greatly in their amino-acid content Vegetable proteins are lacking in amino-acids essential for growth, while animal proteins are much richer in these substances and correspond more closely in composition to the proteins of the body While vegetable proteins may be sufficient for maintenance animal proteins are needed for growth The nursing infant receives from 8 to 12 gm daily up to the ninth month This is equivalent to about 1 5 gm per kilogram and is sufficient for growth and maintenance during the most active period of growth The reason is to be found in the very high grade of the protein of woman's milk, which is especially rich in essential amino-acids When cow's milk is the food a much larger amount of protein is required as the protein of cow's

milk is deficient in some of the important amino-acids, especially cystin It is therefore necessary to give two or three times as much protein as is contained in woman's milk Low protein or an insufficient amount of protein is one of the reasons for the failure of condensed milk as a food and also for the want of success which attended the use of such milk formulas as those which were based on the percentage composition of woman's milk The amount of protein taken by 100 healthy children in their usual diets averaged about 40 gm daily at 1 year, 60 gm at 6 years, 80 gm at 12, and 115 gm at 16 About two thirds of the protein taken was of animal origin, and one third was vegetable protein

Rôle of Fat Soluble Vitamin in Rickets

DR ALFRED F HESS, New York Twelve children were fed on summer milk (from cows in pasture) during the winter, and eight children were fed on winter milk in summer The same percentage of children in both groups developed rickets Diet apparntly did not make any difference The children treated with the ultraviolet light were cured very quickly, as shown by the calcification of the epiphyses, and this occurred in the winter time In March and April we tried sunlight, exposing the children gradually to the sunlight and in a few weeks calcification began Some of these children were getting dried milk, some protein milk and some condensed milk They had been on these diets for at least six months Active rickets reaches its highest incidence in January and its minimum in July The healing of rickets is lowest in January and reached its height in August or September The ultraviolet light treatment was given three times a week for three months, the time of exposure being increased to twenty minutes, at a distance of 125 cm These observations point to the fact that there is a hygienic factor concerned in the etiology of rickets It might be said that exercise as well as sunlight plays a role in the etiology of rickets, but these children did not exercise more while or after they were subjected to the light treatment than before The evidence points to the value of sunlight in the prevention of rickets and shows the importance of sunlight in child-caring institutions

DISCUSSION

DR ROWLAND G FREEMAN, New York It has always seemed to me that all we know about rickets points to the fact that it is a disease produced by darkness About all the rickets we see occurs in children who have come from a tropical climate We see it in all the tropical races coming to America

DR E C FLEISCHNER, San Francisco I have come to feel that the outside environment is a factor in the etiology of rickets I think the greater amount of sunlight and the outside environment explains, in part, at least, why there is less rickets in California than in the East It would be interesting to know whether there is less rickets among the negroes in the South than among those in the North

DR L R DEBUYS, New Orleans Rickets is very common among the negroes in the South more so than among white children It is just as common in rural districts as in the cities The diet and living conditions are about the same in the city as in the country

DR HENRY HEIMAN New York I believe there is an individual and a predisposing factor Negroes and Italians are predisposed to rickets

DR ALFRED F HESS, New York I did not wish to take up the subject of predisposition When on some milk 25 per cent of the children will get rickets while the others under the same conditions will show no sign of the disease This shows that there is some individual idiosyncrasy I wish to emphasize the cure of rickets by ultraviolet light and sunlight

Clinical and Roentgenologic Study of Enlarged Thymus in Infants

DRS KENNETH D BLACKFAN and KARL F LITTLE Cincinnati We have made a clinical and roentgenologic examination of the thymus both in normal infants and those who have presented symptoms referable to it The results indicate that an area of dulness in the region of the thymus with a corresponding shadow in the roentgenogram occurs in a relatively large number of normal infants That is due to to the thymus is shown by the fact that the shadow becomes smaller after exposure to roentgen rays A thymus large enough to demonstrate by percussion and to show in the plate does not necessarily show symptoms

DISCUSSION

DR ALFRED FRIEDLANDER Cincinnati In our earlier studies we had precisely the same experience and theories to explain how the thymus produces the symptoms of thymic asthma These theories have no support today It may be that as many as 48 per cent of children show an enlarged thymus, and a large percentage of them show no symptoms If the symptoms of thymic asthma are present even though the roentgen ray does not show the presence of an enlarged thymus, radiation should still be given

DR MAYNARD LADD, Boston A child brought into the hospital with a temperature of 102 F and convulsions died shortly afterward There was nothing in the previous history to explain these symptoms and the sudden death At the necropsy the thymus weighed 62 gm May it not be possible that the symptoms are due to an internal secretion rather than to pressure?

DR CHARLES G KERLEY, New York A child has been under my observation whose attacks of thymic asthma have been entirely relieved by roentgen-ray treatment

DR JOSEPH BRENNEMANN, Chicago One should be skeptical of single roentgenograms as evidence of thymic enlargement as the shadow varies with inspiration and expiration The idea is prevalent that the symptoms of thymic asthma are aggravated for some hours after roentgen-ray treatment Is that the common experience? If so it would lead one not to give the roentgen-ray treatment when there is more or less aggravation of symptoms

DR FRITZ B TALBOT, Boston A short time ago one of the rabbits used for experimental purposes at the Massachusetts General Hospital died suddenly, and at the necropsy an enlarged thymus was found

DR LANGLEY PORTER San Francisco A mongolian idiot, 4 years old, died of pneumonia At the necropsy the thymus weighed 55 gm

DR HENRY HEIMAN New York Thymic asthma, at least clinically, is a very rare disease and must not be confused with stridor diphtheria infection and deformity of the glottis and epiglottis or with latent spasmophilia

DR ROWLAND G FREEMAN, New York A tumor in the upper mediastinum which gets large and small with respiration is the thymus In one case of severe thymic asthma coming under my observation, roentgen-ray treatment relieved the symptoms though the thymus has not been reduced in size Two other cases have been treated without reduction in the size of the thymus One of these patients was afterward found dead in bed

A Febrile Exanthem Occurring in Childhood

DRS BORDEN S VEEDER and T C HEMPELMANN St Louis During the last year we have observed cases in which after a period of high fever, lasting from three to four days, and terminating by crisis, an extensive macular or maculopapular eruption developed, limited chiefly to the body and coincident with the fall in temperature The febrile period is characterized by an absence of all symptoms or signs except the fever There is a leukopenia, which may be marked and a relative lymphocytosis Seemingly the infection is not contagious While occurring chiefly between the ages of 1 and 2 years, the disease has been observed in infants of 6 months and older children up to the eleventh year The condition has not been described before

DISCUSSION

DR THOMAS B COOLEY Detroit We have seen these cases in Detroit where there is an outbreak of paratyphoid B fever It is extremely difficult to differentiate the two conditions

DR HENRY F HELMHOLZ, Rochester Minn We have had a little epidemic at Rochester In a group of cases, three in one family the eruption was of the urticarial type and the

symptoms were rather more severe The urticaria cleared up only after the repeated administration of epinephrin

DR J CLAYTON GIDDINGS, Philadelphia These cases have been occurring for years and are probably secondary attacks of rubella

DR HENRY HEIMAN, New York In such cases the clinical diagnosis of intestinal toxemia accompanied by urticaria or erythema is frequently made It would be interesting to study the milk supply

DR J BORDEN VEEDER, St Louis None of these children were receiving any drug There were no toxic symptoms The children were mostly from the better classes They were not getting milk from the same dairy

Diagnosis of Tuberculosis in Childhood

DR CHARLES H SMITH, New York Tuberculosis is not a universal disease of childhood, in this country at least The diagnosis of the presence of tuberculous infection rests largely on the skin reaction, which is of value at any age The activity of the tuberculosis must be judged by the temperature curve and by other signs of toxemia, such as malnutrition and anemia The bronchial nodes are most commonly involved, yet give but few signs D'Espine's sign is the best of these When the D'Espine sign is elicited below the third dorsal vertebra, and especially below the fourth dorsal vertebra, it is very suggestive of tuberculosis

DISCUSSION

DR WILLIAM PALMER LUCAS, San Francisco Another condition which may give rise to D'Espine's sign is a low grade influenza infection

DR LANGLEY PORTER, San Francisco D'Espine's sign is a very valuable and much neglected addition to our clinical methods I have never found D'Espine's sign below the fifth, and rarely below the fourth dorsal vertebra, when there was not some definite change in the mediastinal contents The position of the patient is important in determining-the site at which the sign is heard We seat our patients with the back flexed and the head bent forward There are many other conditions beside tuberculosis that give a definite whispered pectoriloquy as low as the seventh, eighth and ninth vertebrae

AMERICAN GYNECOLOGICAL SOCIETY

Forty Sixth Annual Meeting held at Swampscott Mass June 2 4 1921

The President, DR WALTER WILLIAM CHIPMAN Montreal Canada, in the Chair

Fads and Fancies of Obstetrics

DR RUDOLPH W HOLMES Chicago In safe and conservative hands, maternal and fetal mortalities have decreased in private practice The maternal and fetal death rates in hospitals have not shown an appreciable decline in 100 years The fact that the death rate among the emergency cases (i e, those sent in by medical attendants) is over ten times that of regular applicants in the New York Lying-In Hospital is a reflection on the preliminary medical training of the profession A properly conducted prenatal clinic, combined with conservative conduct of labor, is a more certain method of routine interference in all parturient women with intervention The authorities who have fostered a peculiar method of routine interference in all parturient woman, with their imitators, have retarded the advance in obstetric care and are part contributors to the high American mortalities incident to childbirth It is lamentable that properly controlled midwives have less mortality than those who practice a routine intervention The proponents of operative cults have produced no evidence to show that their systems are more worthy, less risky, and promise a higher conservation of life than carefully watched spontaneous labor There are no more reasons why all parturient women should be delivered operatively than that all people should be inflicted with routine enemas or catheterization Indications for obstetric operations demand revision A wise conservatism in obstetrics will be more productive of ideal results than injudiciously used skill Obstetric teaching is so deficient in most colleges that there should be a sharp and early improvement So long as obstetric teaching is defective, so long will obstetric results be bad in practice An obstetric curriculum should be devoted to practical instruction on the manikin, in the class room, and in the clinic, obstetric surgery should be a very small part of the coordinated whole The proper place of the latter is in postgraduate courses intended for those preparing for the specialty

Radium Therapy in Vulval and Vaginal Cancer

DRS HAROLD C BAILEY and HALSEY J BAGG, New York By means of radium, the original lesion may be eliminated completely without loss of any considerable amount of normal tissue, without sloughing and with comparatively little pain There is a minimum opportunity for spreading the disease, especially if the insertion of the tubes is preceded by an application of heavily filtered radium, which tends to devitalize the tumor cells Whenever possible, the radium tubes surrounding the lesion are inserted through normal tissue If the tubes are of 5 mc strength, the elimination of the tumor is associated with extensive sloughing and prolonged and serious discomfort, whereas the smaller dose of about 0 5 mc accomplishes as much for the removal of the growth, and yet without sloughing and with little pain Except in the most minute lesion, it is not possible to arrange the placing of the tubes so that all the cancer cells are effectively radiated Filtered radium, to check further the growth of the injured or partly damaged cells, is necessary as an adjunct to the implantation of bare tubes in vulval and vaginal cancers

Disposition of Uterus Following Salpingectomy When It Is Desirable to Preserve Menstruation

DR CAREY CULBERTSON, Chicago The reduction of the uterus in size by removal of its entire fundus is a ready method of disposing of the organ after salpingectomy when, particularly in young women, it is desirable to preserve menstruation Defundation becomes a logical procedure not only in operating for the cure of infectious processes, but also for simple sterilization, for ectopic pregnancy ovarian cystomas and like conditions Its only contraindication from a technical point of view is that of procidentia uteri

Dietary Factors in Causation of Sterility in Rats

DRS EDWARD REYNOLDS and DONALD MACOMBER Boston A moderate decrease in the percentage of the fat-soluble vitamin of the protein, or of the calcium contained in an otherwise excellent diet produces a definite decrease in the fertility of individual rats A slight decrease in the fertility of both partners will produce a sterile mating The fertility of the mating may be stated as the product of the fertility of the individuals concerned If the index so obtained falls below a given point the mating will be sterile, and this result holds true whether the partners are of equal or of widely different fertility These principles explain the fact that two individuals which are sterile, when mated together, may nevertheless reproduce freely when mated to new partners (of higher fertility)

Unsolved Problems in Gynecology and Obstetrics

DR W BLAIR BELL, Liverpool, England The tendency to minimize the importance of biology and to urge the superior claims of hospital study is unfortunate and probably is to some extent accountable for the present position Today elementary gynecologic anatomy and physiology are taught by the clinician and not by the anatomist and the physiologist at any rate in Great Britain The result is that the anatomist and the physiologist are unaware of the hiatuses in our knowledge The man who has difficulties to face in practice, will if properly educated be the person most likely to overcome them The necessary improvements in educational methods are radical The clinician should have the right to define the subject matter of the physiologic and anatomic courses, and physiology should be taught more in coordination with clinical work With regard to postgraduate work it seems likely that the clinical unit and units for group study will give best results

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

Archives of Dermatology and Syphilology, Chicago

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Ringworm of Nails R S Hodges University Ala —p 1
Medical Photography with Special Reference to Skin Diseases H Fox New York —p 27
Visceral Syphilis Syphilis of Lung U J Wile and C H Marshall Ann Arbor Mich —p 37
Case of Probable Paraffin Oil Tumor J H Stokes and A J Scholl Rochester Minn —p 50
Genesis of Neurosyphilis J E Moore Baltimore —p 54
Internal Poisoning from Rhus J B McNair Washington D C —p 62
Sachs Georgi Test for Syphilis F Parker and A V R Haigh New York —p 66
Comparative Study of Syphilis in Whites and in Negroe E I Zimmermann Baltimore —p 73

Ringworm of Nails—Hodges presents a preliminary report of sixteen cases of onychomycosis with a cultural study of twelve of these cases due to trichophytons

Medical Photography in Skin Diseases—To obtain a collection of good medical photographs Fox claims it is generally necessary for the medical man to learn at least to pose the patient and to make the exposure himself Satisfactory medical photographs cannot be made by the average professional photographer, as he is ignorant of the exact anatomic condition which is desired to be reproduced

Case of Probable Paraffin Oil Tumor—In view of the probability that a considerable amount of adulterated camphorated oil has been used during the influenza epidemics of the past two years Stokes and Scholl suggest that as much medical publicity as possible should be given to the camphorated oil tumor, as its deceptive histology and misleading clinical appearance are likely to result in the diagnosis of tuberculosis and of malignant neoplasia

Genesis of Neurosyphilis—In fifty-four cases of syphilis in all stages of the disease, but without demonstrable neurologic involvement an early negative spinal puncture was repeated by Moore with positive results in two In one of the positive cases, invasion of the central nervous system had apparently taken place by direct extension from a gummatous periostitis of the inner cranial table, in the other it probably occurred during a second period of generalization of the disease In the majority of cases of neurosyphilis Moore says invasion of the central nervous system takes place during the first few months of the infection, but in some cases it may occur at any time during the course of syphilis by one of the two mechanisms outlined The appearance of recurrent secondary syphilis or the recurence of a positive blood Wassermann reaction after a lapse in treatment is the probable outward manifestation of a fresh generalization of the disease and should be made the occasion for reexamination of the cerebrospinal fluid

Sachs-Georgi Test for Syphilis—The Sachs-Georgi reaction as observed by Parker and Haigh agreed with the Wassermann reaction in 93 07 per cent of 520 parallel cases

Archives of Surgery, Chicago

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*Anatomy and Surgery of Trigon H H Young and M B Wesson Baltimore —p 1
*Diverticula of Urinary Bladder W E Lower Cleveland —p 38
*Tumors of Bony Chest Wall C A Hedblom Rochester Minn —p 56
*Resection of Pylorus for Gastric Ulcer K W Doege Marshfield Wis —p 86
*Traumatic Spondylolisthesis Report of Two Cases S Kleinberg New York —p 102
*Studies in Exhaustion II Exertion G W Crile Cleveland —p 117
*Course of Recovery Following Trauma of Spinal Cord S Cobb Boston and C C Coleman Richmond Va —p 132
*Fracture of Skull W P Eagleton Newark N J —p 140
Cholecystitis R R Graham Toronto —p 154
Clinical Value of Certain Bacteriostatic Triphenylmethane Derivatives C C Berwick San Francisco —p 168
Fifteenth Report of Progress in Orthopedic Surgery R B Osgood R Soutter H C Low M S Danforth C H Bucholz L T Brown and P D Wilson Boston —p 181

Anatomy and Surgery of Trigon—The review made by Young and Wesson shows that the trigonal muscle is a definite entity, continuous with the longitudinal muscle fibers of the ureters and is superimposed on the muscles of the bladder wall The opening of the vesical orifice during urination is not an inhibitory action, but is primarily the result of the contraction of the powerful trigonal muscle which passes in the form of an arc through the weaker arcuate muscles at the vesical orifice (the vesical "sphincter") and pulls them open mechanically on contraction When the trigon is removed, micturition is difficult and incomplete with removal of one half of the trigon the remaining half functions and the bladder can be entirely be emptied The same is true when the trigon is split A split trigon is not functionally so perfect as one with Mercier's bar intact According to pharmacologic tests nerve ganglions and true sympathetic fibers are present in the trigonal muscle while the bladder wall has sympathetic and parasympathetic fibers The trigon is distorted in cases of renal tuberculosis, the shortened tuberculous ureter drawing the ureteral ridge outward on the bladder wall It may cause invagination of the ureteral margin and elevation of the trigon on that side, the bladder wall being depressed about it If adhesions are present between the diaphragm and kidney the shortened tuberculous ureter with respiration causes the trigonal ridge to play back and forth like a piston rod in the invaginated ureteral orifice There is a compensatory hypertrophy of the trigon in cases of obstruction at the vesical orifice due to overexercise of the trigonal muscle in opening the vesical orifice A corresponding atrophy follows the removal of the obstruction The force from the contraction of the trigonal muscle dissected partly free from the bladder wall, irrespective of the amount of hypertrophy is not properly applied to help in the opening of the vesical orifice The contraction of a hypertrophied trigon dissected free from the bladder wall tends to form a damlike ledge dividing the bladder into two parts A diverticulum may form beneath the undermined trigon The obstruction due to a hypertrophied trigon can be removed (1) intra-urethrally by means of a punch or a trigonotome (2) perineally by means of a scalpel or trigonotome (3) suprapubically by the use of scalpel and scissors

Diverticula of Urinary Bladder—Lower agrees with Watson that there is a congenital predisposition to bladder diverticula but that 'their clinical recognition during adult life is hastened and their dimensions greatly increased by any of the factors that would bring about increased vesical distention or increased activity of the bladder musculature The fact that diverticula usually occur in patients past middle age and almost invariably in the male with the concomitant presence of obstruction, seems to confirm such a theory With the congenital weakness of the bladder wall aggravated by pressure due to obstruction of the urinary outlet it is evident that diverticula may readily form, as also in cases in which an overdistended condition of the bladder is due to failure to empty it at regular intervals Two rather striking examples of diverticula apparently due to the latter condition have come under Lower's observation Both patients were mail carriers and each stated that he attributed his difficulty to the fact that on the mail route it was not always convenient to empty the bladder and that therefore he had held his urine much longer than under ordinary conditions An analogous pathologic condition, due to a congenital defect is diverticulum of the esophagus

Tumors of Bony Chest Wall—Tumors of the bony chest wall are relatively rare Hedblom analyzes 213 cases (61 4 per cent sarcoma and 18 7 per cent chondroma) The ribs were primarily involved in 78 7 per cent and the sternum in 21 3 per cent Trauma seems to be etiologic in some cases both with regard to incidence and to malignant degeneration of the benign forms Pain is the most characteristic symptom and may be present in the case of a benign as well as of a malignant tumor Pain may be present before the tumor is recognized Early differential diagnosis of neoplasm and cold abscess exostosis, aneurysm and dermoid cyst may be difficult Preoperative differentiation of a benign or a malignant neoplasm may be impossible Early radical extirpation offers the best prospect of prolonging life and of cure Late radical

or palliative extirpation, even in the presence of extensive involvement, may result in a relatively long period of freedom from recurrence Early thoracotomy is indicated in any doubtful case Differential pressure anesthesia, while not essential to the successful removal of tumors involving wide opening of the pleural cavity, obviates the risk incident to sudden open pneumothorax, and by preventing a closed pneumothorax may lessen materially the occurrence of postoperative shock, pneumonia and empyema Intratracheal or intrapharyngeal insufflation anesthesia affords an effective means of preventing operative pneumothorax Shock, pneumonia, and empyema are the common causes of postoperative deaths Recurrence has been the rule in most cases of malignant tumor, but there may be freedom from recurrence for many years and life may be further prolonged by repeated extirpation of the growth

Resection of Pylorus for Gastric Ulcer—In nine cases reported by Doege the operations performed were seven Billroth II, one sleeve resection of the pyloric antrum and one Polya operation All patients were completely satisfied with the result of their operations and had good health Doege feels that the cure of chronic gastric ulcer by gastroenterostomy alone is doubtful Gastro-enterostomy gives the best results in ulcers near the pylorus accompanied by pyloric stenosis Only temporary benefit can be hoped for after gastro-enterostomy in ulcers which are distant from the pylorus Pylorectomy with posterior gastro-enterostomy fulfils the principle requirement for the cure of gastric ulcer i e, removal of acidity better than any other operation

Two Cases of Traumatic Spondylolisthesis—In one of Kleinberg's cases the cause was a beam striking the patient on the back of the neck and throwing him to the ground resulting in rupture of the lumbosacral ligaments and forward subluxation of the fifth lumbar vertebra In the second case, the patient, while carrying a weight on his right shoulder had another weight thrown onto his shoulder when he did not expect it This caused him suddenly to "cave in" He felt a severe pain in the back at the time, but did not fall to the ground He caught himself just as he got to the ground and straightened up The pain in the back continued to annoy him, but he was able to work until the end of the day, which was two hours after his injury This patient became aware of the hollow in the lower part of the back soon after the injury

Studies in Exhaustion—Crile investigated combined exertion and fear in red foxes, combined exertion and anger in dogs, combined exertion and anger in cats prolonged exertion in rats and salmon and the discharge of electric mechanism in electric fish (narceine brasiliensis) It was evident that extreme physical exertion in various land animals and in fish causes demonstrable histologic lesions in the central nervous system, the liver and the suprarenals, these changes being least marked in the liver These histologic changes are identical in character with those described as due to prolonged insomnia Chemical studies made after animals had been subjected to extreme exertion show an increased iodin content of the thyroid and slightly increased glycogen content in the liver, a diminished glycogen content in the muscles, greatly diminished epinephrin content and a diminished epinephrin activity The hydrogen-ion concentration of the blood and of the urine is increased by extreme exertion The clinical effects of exertion as immediately manifested in increased temperature, pulse and respiration, and later in acute or chronic exhaustion are self-evident

Recovery Following Trauma of Spinal Cord—The histories of twenty patients with spinal cord injury from bullet and shrapnel wounds were analyzed by Cobb and Coleman One of the most important questions raised by this study is whether or not the late results would be better if early operation were performed This study shows that it is often impossible to classify spinal cord injuries clinically with reference to the extent of the cord destruction, and many cases which at first are regarded as hopeless may require regrouping later, because of the appearance of signs indicating a resumption of cord function Recovery of function in such cases may progress to an almost complete restoration In view of the difficulty of determining early which cases have a complete anatomic transsection and which have edema, hemorrhage, and compression superimposed on an incomplete lesion, it does not seem justifiable to delay operation in all cases in which there appears to be a complete physiologic interruption If an operation is withheld until some signs of recovery of cord function appear, additional damage to the cord may result The residuals, then, could be attributed in part to the failure to offset the pressure effects by early decompression Thus it seems to Cobb and Coleman that the conservatism advocated by some in the treatment of severe cord injuries should be modified If the patient's general condition justifies an operation, an effort should be made to reduce or prevent the later disabilities by prompt exploration of the injured cord provided a reasonable doubt exists as to whether or not the cord is completely divided

Fracture of Skull—The importance of the early diagnosis and operative treatment of fracture of the skull is dwelt on by Eagleton and he shows a chart of clinical classification and treatment, and guide for detailed neurologic examination

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Mechanical Explanation of Suffering Which is Associated with Prolapse of Uterus G M Garland Boston—p 689
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The X B C of Radium E M Deland Boston—p 696

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Preoperative Treatment of Urinary Lithiasis E L Young Boston—p 4
Cancer Question R S V P S W Little Rochester N Y—p 9
Symptoms and Treatment of Acute Cardiac Failure Report of Case T F O Brien Boston—p 15
Vesicointestinal Fistula Report of Case End Results F F Doggett Boston—p 22
Prolapse of Uterus During Pregnancy G M Garland Boston—p 25
Weight Prediction by Formulas of Bornhardt Von Pirquet and Drever H Gray and H F Root Boston—p 28

Gassing and Tuberculosis—The points to be remembered in differentiating pulmonary tuberculosis from the effects of gassing Hawes says are Do not take it for granted that a given process is tuberculous, even with a suggestive roentgenogram Do not do the reverse A general appearance of robust health with marked symptoms is against tuberculosis The lung complications resulting from gas are usually basal and not apical processes and the usual signs found are those of a thickened pleura and often a localized bronchitis Further following gassing there is apt to be a marked increase in nervous symptoms of every kind Do not take it for granted that these men who have been gassed are not sick and do not need treatment, even if you decide that they do not have tuberculosis or, indeed not much wrong with their lungs in any way Treat the man who has been gassed and not his lungs

Treatment of Cardiac Failure—In cases of acute heart failure when the patient must be helped within from three to five minutes O Brien says strophanthin in maximum dose is indicated given intravenously In cases not so acute digitalis leaf in maximum dose, by mouth, is indicated with exceptions and with care to have a dependable digitalis

Colorado Medicine, Denver

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Change in Hydrogen Ion Concentration of Various Mediums During Heating in Soft and Pyrex Glass Tubes J R Esty and P H Cathcart Washington D C —p 29
*Changes in Alkali Reserve Sugar Concentration of Blood and Leukocytes in Experimental Infections E F Hirsch Chicago —p 40
*Bacteriologic Studies of Upper Respiratory Passages I Hemolytic Streptococci of Adenoids I Pilot and S J Pearlman Chicago —p 47
Id II Pneumococci and Nonhemolytic Streptococci of Adenoids and Tonsils I Pilot and S J Pearlman Chicago —p 51
*Id III Influenza Bacilli (Pfeiffer) of Adenoids and Tonsils I Pilot and S J Pearlman Chicago —p 59
Id IV Incidence of Pneumococci Hemolytic Streptococci and Influenza Bacilli (Pfeiffer) in Nasopharynx of Tonsillectomized and Non tonsillectomized Children J Meyer I Pilot and S J Pearlman Chicago —p 59
*Id V Diphtheria Bacilli and Diphtheroids of Adenoids and Tonsils I Pilot Chicago —p 62
Trehalose Fermentation in Differentiation of Paratyphoid Enteritidis Group S A Koser Washington D C —p 67
Production of Hydrocyanic Acid by Bacillus Pyocyaneus F A Patty Lawrence Kan —p 73
Micro copic Method for Anaerobic Cultivation V Itano and J Neill Amherst Mass —p 78
Production of Carbon Dioxid by Typhoid Bacillus and Mechanism of Russell Double Sugar Tube H J Nichols Washington D C —p 82
Effects of Filtration of Potencies of Antitoxins W N Berg Washington D C —p 86
*Spread and Persistence of Hemolytic Streptococci Peculiar to Scarlet Fever R Tunnicliff Chicago —p 91
Recovery from Rabies Cases of Treatment Paralysis and Recovery of Animals Apparently Rabid J M Phillip F Berry and J H Snook Columbus Ohio —p 97

Alkali Reserve, Sugar Concentration, and Leukocytes of Blood in Experimental Infections—Hirsch states that depression of the alkali reserve of the blood in rabbits by intravenous injections of pathogenic bacteria is accompanied by a transient hyperglycemia the degree of hyperglycemia apparently depending on the extent of alkali reserve diminution Subcutaneous administration of carbonate or bicarbonate solutions does not prevent the acidosis produced by these injections of bacteria Injections of acid potassium phosphate solutions depress the alkali reserve of the blood, this lowered alkalinity being associated with a hyperglycemia and by changes in the number of leukocytes similar to those following injections of bacteria The concentration of sugar in the blood seems to be independent of the changes in the number of leukocytes

Hemolytic Streptococci of Adenoids—Cultures were made by Pilot and Pearlman from the adenoids of 103 children who presented adenoids and tonsils of varying degrees of hyperplasia with no evidence of any recent acute inflammation fever or subjective symptoms of sore throat From nasopharyngeal swabs and the surface of the adenoids, hemolytic streptococci were recovered in 55 per cent, from the depths between the folds and of the cryptlike depressions of the adenoids of the same persons, in 61 per cent in larger numbers The excised tonsils of the same patients revealed hemolytic streptococci in still larger numbers in 95 per cent These streptococci agree in their morphology, cultural characteristics fermentation reactions and pathogenicity, and are practically identical with hemolytic streptococci from various human sources The authors emphasize that the adenoids like the tonsils are to be considered as common foci harboring hemolytic streptococci

Pneumococci and Nonhemolytic Streptococci of Adenoids and Tonsils—To ascertain more accurately the incidence of pneumococci in the throat and nasopharynx cultures were made by Pilot and Pearlman from extirpated adenoids and tonsils In a series of 103 adenoids, pneumococcus occurred in 65 per cent 2 per cent of which were Type II 13 per cent Type III and 85 per cent Type IV In the nasopharyngeal swabs of 21 persons the pneumococcus was recovered in 71 4 per cent from the tonsils of the same persons in 66 6 per cent and the adenoids in 71 4 per cent It was observed that in the depths of the folds and the crypt-like depressions of the nasopharyngeal vegetations and from the tonsillar crypts the pneumococci were decidedly more numerous than the swabs In four instances the pneumococci occurred practically in pure cultures from the adenoids *Streptococcus viridans* was found in 89 per cent of the adenoids and 81 per cent of the tonsils *Streptococcus mucosus* was encountered in 3 per cent of the adenoids, and indifferent streptococci in 12 per cent The Mathers coccus was noted in 17 per cent of the adenoids, once in pure culture The adenoids and tonsils are foci in which pneumococci and nonhemolytic streptococci commonly flourish

Influenza Bacilli of Adenoids and Tonsils—Gram-negative pleomorphic hemoglobinophilic bacilli, showing a preference for heated blood agar and revealing the characteristic property of symbiosis were isolated by Pilot and Pearlman and identified in 40 9 per cent of extirpated adenoids and in 53 9 per cent of the excised tonsils from 115 persons In the nasopharynx they were present in 40 per cent of 25 persons and in fewer numbers The tonsils and adenoids therefore are foci in which influenza bacilli (Pfeiffer) commonly flourish

Pneumococci, Hemolytic Streptococci and Influenza Bacilli in Nasopharynx—Pneumococci hemolytic streptococci and *B influenzae* were often found in the nasopharynx of normal children but the incidence and numbers of hemolytic streptococci and influenza bacilli in the nasopharynx is decidedly less in the children whose adenoids and tonsils had been removed In case of the pneumococcus, the numbers are less in the same children than in those whose tonsils were present The removal of tonsils and adenoids reduces the number of certain bacteria in the oropharynx and nasopharynx but does not cause their disappearance

Diphtheria Bacilli and Diphtheroids of Adenoids and Tonsil—Cultures made by Pilot of the excised adenoids of 100 children revealed *B diphtheriae* in 12 The crypts of the extirpated faucial tonsils of the same persons harbored the bacilli in 12 When present in the tonsils the bacilli also occurred in the adenoids of the same person In the tonsillar crypts the diphtheria bacilli were usually more numerous than in the adenoids Two of the twelve strains were virulent one showed attenuated virulence, three were pathogenic in large doses of the first culture while subsequent cultures were without virulence remainder were totally avirulent Diphtheroids occurred in thirty of the adenoids and in seventeen of the tonsils when present in both they were decidedly more numerous in the naso pharyngeal vegetations than in the tonsillar crypts

Spread of Hemolytic Streptococci in Scarlet Fever—Tunnicliff states that hemolytic streptococci may be isolated from the floor and walls of rooms occupied by patients with scarlet fever and diphtheria, and from the fingernails face masks and shoes of the attending nurses and from the eating utensils used by patients harboring hemolytic streptococci Only five of twenty strains thus isolated were opsonified and agglutinated by the serum of a sheep immunized with

a hemolytic streptococcus from scarlet fever and hence to be considered as specific for scarlet fever Four of these strains were isolated from the eating utensils of scarlet fever patients and one from the face mask of the nurse in attendance These results indicate the value of face masks and the necessity of disinfection of eating utensils used by patients with infectious diseases It would appear also that persons associated with scarlet fever patients may develop tonsillitis without an exanthem and harbor hemolytic streptococci which belong to the same biologic group as those isolated from typical cases of scarlet fever Agglutination of hemolytic streptococci from suspected cases of scarlet fever, by immune sheep serum specific for streptococci from scarlet fever, has proved helpful in diagnosis These results suggest, further, that while patients with scarlet fever generally rid themselves of hemolytic streptococci specific for scarlet fever in from three to four weeks, patients with discharges may retain them much longer, and that the streptococcus specific for scarlet fever disappears at the time when the patient becomes noninfectious according to clinical experience

Spontaneous Recovery from Rabies—The cases seen by Phillips, Berry and Snook show that spontaneous recovery from rabies naturally acquired, while rare, does occur The saliva of an animal which recovers from rabies may have been extremely virulent during the course of the disease As early as thirty-eight days after recovery from rabies in a dog, the infectivity of the brain may disappear and Negri bodies be absent Therapeutic measures to control the symptoms in developed rabies in man should not be so heroic as to themselves endanger the life of the patient, for there is a possibility of recovery

Journal of Medical Research Boston

March May 1921 **41** No 3

*Investigation of Virus of Measles A W Sellards and G H Bigelow Boston—p 241
*Nature of Action of Nonspecific Protein in Disease Processes II Horse Serum and Soluble Toxin D M Cowie and R M Greenthal Ann Arbor Mich—p 261
Precipitins in Bloodserum of Arthropods L Loeb St Louis—p 269
Specific Adaptation Between Body Fluids and Blood Cells in Invertebrates L Loeb St Louis—p 277
Pigmentation of Heart Muscle D H Dolley and F V Guthrie Columbia Mo—p 289

Virus of Measles—A small pleomorphic Gram-staining bacillus was recovered by Sellards and Bigelow in blood culture from measles patients It was found in twenty-five of thirty-one cases using methods for the inhibition of phagocytosis in the cultures It was sometimes found in considerable numbers growth occurring in one instance from the inoculation of 0.01 c.c. of blood Similar cultures in twenty-four control individuals resulted in growth in five cases In their morphology and staining reactions, these control cultures resembled closely the strains from measles cases Fermentation tests showed that at least three of the cultures from control cases were definitely different from the majority of the measles strains The majority of the measles strains fermented glucose dextrin and in some instances saccharose Three of the five cultures from control cases failed even to ferment glucose A few of the strains from measles cases failed to ferment glucose and are therefore regarded as distinct from the majority of the measles strains Three monkeys were inoculated with strains from measles cases In two the symptoms were vague consisting only of a diffuse erythema and isolated papules In one however a suggestive cluster of macules and papules developed some of which became petechial Histologically, these lesions conformed to the description of the human lesions This animal was tested by a reinoculation of the same organism and no symptoms developed

Nonspecific Protein in Horse Serum and Soluble Toxin—Cowie and Greenthal found that 1 c.c. of normal horse serum when injected subcutaneously or intravenously into guinea-pigs simultaneously with diphtheria toxin will always protect against a fatal dose and may protect against as high as eight fatal doses of the toxin Larger doses of normal horse serum protect against larger doses of diphtheria toxin but the effect is necessarily proportional The highest protection that is recorded in the present investigation is against 15 M L D with 3 c.c. of horse serum The protecting power of normal horse serum resides in the protein portion and not in the alcoholic soluble portion The protein portion of 1 c.c. of horse serum always protects against a fatal dose of toxin There seems to be evidence that the protecting power of the horse serum used was not entirely due to the presence of diphtheria antitoxin in the serum

Medical Record, New York

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Biologic Cause of Metabolism and Metabolic Diseases F B Turck New York—p 1
Some Mouth and Jaw Conditions Responsible for Defects in Speech J S Greene New York—p 8
Sea Bathing and the Ear A Rovinsky New York—p 12
Food Combination T J Allen Eureka Springs Ark—p 14
*Automatic Gravity Anesthetizer A L Soresi New York—p 16
Large Doses of Bacterial Vaccine in Gonorrheal Arthritis H W Lyding New York—p 18

Automatic Gravity Anesthetizer—Soresi's automatic gravity anesthetizer is said to deliver the anesthetic to the mask by gravity in any amount and combination desired, that can vary from a continuous abundant stream, to one or more drops per minute The amount can be increased or decreased at will or can be kept stationary for any length of time or stopped completely by simply turning a small knob The apparatus will functionate with perfect satisfaction under all circumstances, climate temperature, altitude position of the patient will not hamper the perfect work of the apparatus, because its construction is so simple that there is nothing to get out of order It can be clamped to any table or bed put at any height, and—by means of a ball-and-socket arrangement of its support—bent to any angle, so that the anesthetic is carried to the mask by the force of gravity which naturally is absolutely constant under all circumstances The apparatus consists of a metal cylinder lined with glass of about 250 c.c. capacity containing the anesthetic a little chamber through which the anesthetic drops a tube that carries the anesthetic to the mask, the whole apparatus is attached to the operating table or bed by a support which can be raised or lowered and bent to any desired angle

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Treatment of Some Fractures of Long Bones Including Some Fractures of Pelvis E H Smith San Francisco—p 47
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Prostatic Obstruction P F Truesdale Fall River Mass—p 63
Relationship of Pelvic Disorders to Those of Adjacent Viscera J W Nixon Jr San Antonio Tex.—p 65
Case of Epidemic Meningitis Treatment by Combined Serum and Vaccine Therapy C E Nammack New York—p 67

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Anatomical and Clinical Syndromes of Corpus Striatum J Lhermitte—p 163
*Clinical Phenomena of Decerebrate Rigidity O S Strong New York.—p 183

Clinical Phenomena of Decerebrate Rigidity—Strong reports a case exhibiting some of the symptoms of the conditions as described by Wilson as well as certain peculiarities of associated movements

New York State Journal of Medicine, New York

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Future of Medicine in America L F Barker Baltimore—p 189

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Special Field of Neurological Surgery after Another Interval H Cushing Boston—p 373
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Future of Industrial Medicine in Labor Policy O P Geier Cincinnati—p 386
Primary and Secondary Nitrous Oxid Saturation for Relaxation and As Test of Patient's Capacity for Operation E I McKesson Toledo—p 390

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Oklahoma State Medical Ass'n Journal, Muskogee

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Service and Efficiency L M Westfall Oklahoma City —p 133
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Pennsylvania Medical Journal, Harrisburg

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Heredity as an Element in Bacterial Diseases R A Kelly Danville —p 609
Bone Necrosis with Special Reference to Tubercular Lesion M W Reed Bellefonte —p 614
Use of Thomas Splint in Fractures of Femur D V Webb Scranton —p 617
Traumatic Paralysis of Left Superior Oblique Muscle Relieved by Tenotomy of Right Inferior Rectus E A Shumway Philadelphia —p 623
Muscular Advancement Operation W C Posey Philadelphia —p 627
Antiscorbutic Vitamin M H Givens Pittsburgh —p 629
Pyloric Stenosis Report of Fifty Cases H C Deaver Philadelphia —p 632
Mechanical Influences in Sciatica E W Fiske Pittsburgh —p 638

Public Health Journal, Toronto

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South Carolina Medical Ass'n Journal, Greenville

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*Habitual or Recurrent Dislocation of Shoulder M S Henderson Rochester Minn —p 1
Arthroplasty of Jaw J M Neff Chicago —p 8
*Focal Infection and Selective Localization of Bacteria in Appendicitis Ulcer of Stomach Cholecystitis and Pancreatitis E C Rosenow Rochester Minn —p 19
Value of Local Anaesthesia in Surgery of Today W Bartlett St. Louis —p 27
*Acute Partial Enterocele C F Sawyer Chicago —p 38
Comparative Study of End Results of Cholecystostomy and Cholecystectomy F D Moore Chicago —p 41
Results in Open Treatment of Fractures J F Smith Wausau Wis —p 45
Primary Scleroma of Larynx in a Negro Born in Maryland S S Watkins Louisville Ky —p 47
Supports of Uterus A J Nyulasy Perth Australia —p 53
*Adenomyoma of Fallopian Tube A E Mahle Rochester Minn —p 57
*Successful End to End Suture of Common Carotid Artery in Man H G Sloan Cleveland —p 62
*Abdominal Pregnancy with Living Child F C Moore Los Angeles —p 65
Weak Spot in American Surgery T S Cullen Baltimore —p 67
Brain Abscess Following Frontal Sinusitis W O Ott Rochester Minn —p 72
Nitrous Oxid Oxygen Analgesia in Major Operations G W Crile Cleveland —p 74
Tuberculous Ulcer of Anterior Vaginal Wall with Resection of Ulcer E K Cullen Detroit —p 76
*Method of Cranioplasty M Ballin Detroit —p 79

Operation for Dislocation of Shoulder.—Capsulorrhaphy to strengthen the shoulder gave 50 per cent cures in the sixteen cases of habitual or recurrent dislocation of the shoulder reported on by Henderson. Five of the patients (31.25 per cent.) are so decidedly improved that they are more than satisfied with the operation. This percentage of improvement and the percentage of cures give good results in 81.25 per cent. Henderson thinks it is probable that muscle pull or possible relaxation of the shoulder capsule above has not been sufficiently considered in the treatment. He suggests therefore that the pectoralis major, teres major and latissimus dorsi be lengthened and if thought necessary the region of the capsule where the supraspinatus and infraspinatus are inserted and the anterior and inferior portion of the capsule be reefed.

Focal Infection and Appendicitis, Etc.—The demonstration that the foci of infection in tonsils and teeth, so commonly noted in patients with ulcer of the stomach, cholecystitis, pancreatitis or appendicitis, contain bacteria which reproduce these respective diseases in animals, Rosenow says suggests strongly that such foci must be important factors in the production of these conditions in man. In fact he believes that the conclusion that streptococci are the chief cause of ulcer of the stomach, cholecystitis and appendicitis, and probably, pancreatitis, seems to be justified.

Acute Partial Enterocele.—Sawyer's patient had been operated on for acute suppurative appendicitis. The wound healed after prolonged drainage, leaving a protrusion at the site of the scar. This bulging varied in size when straining, etc., and was never tender or painful. Five years after the operation he was seized with sudden severe pains referred to epigastrium. Pain was excruciating and there was general abdominal tenderness with localization in a protruding mass in the old scar. He presented the typical picture of strangulation of a very severe character and was sent at once to the operating room. A good sized sac was opened containing dark bloody fluid and a mass of omentum adherent in places to the sac wall. At the neck of the sac, at the side of the small base of this omental mass, there protruded a very dark, plum-colored bud of intestine. When released this was found to be ileum and the constriction had involved about one-half of its circumference. The bowel was not resected but was placed in the abdomen beneath the incision with a cigaret drain beside it. The patient made a very good recovery.

Primary Scleroma of Larynx.—*Only two cases of primary* scleroma of larynx have been encountered in one and a half million patients treated in the wards and outpatient department of the Johns Hopkins Hospital during the past thirty years; one was an immigrant who had been treated in Berlin before coming to America, the other recorded in this paper is the first case observed in a native of the United States. The patient was a negro born in Baltimore who had not been out of this country except to the West Indies and Central American countries where he went as a fireman on a ship that plied between Baltimore and southern ports.

Adenomyoma of Fallopian Tube.—Twenty-three cases of adenomyoma of the fallopian tube reported by Mahle were seen in the Mayo Clinic between January, 1910 and July, 1920. During this time 4,189 fibromyomatous uteri were removed of which 332 (7.9 per cent.) contained adenomyomas. In fourteen (60.8 per cent.) of the twenty-three they were able to trace a direct origin from mature tubal epithelium. In six cases adenomyomas and tuberculous granulation tissue in the tube lumen could be traced in to the tube wall surrounding the adenomatous structures. In three cases no direct continuation from the tubal mucosa could be demonstrated but serial sections through the entire tube on the uterine side showed the absence of any gland structure. From this it is concluded that the origin is most probably from the tubal mucosa.

Suture of Carotid Artery.—During an operation on the neck for recurrence of a carcinoma of the lip the common carotid was nicked. Before the bleeding was controlled by finger compression above and below the bleeding the vessel wall was badly damaged by hemostats for about three-fourths of a centimeter the damaged portion encroaching on about half of its circumference. The damaged area of the vessel was excised and an *end-to-end anastomosis* made. During the operation the circulation was cut off from the right side of the brain for thirty minutes but on completion of the operation pulsation was felt in the temporal artery on the side of the sutured carotid. The second day after the operation the pulsation in the right temporal artery was of about half the volume of that of the opposite side. However on the third day, the pulsation on the two sides was of equal volume and has so continued ever since.

Abdominal Pregnancy with Living Child—Moore reports the case of a woman who six weeks after becoming pregnant began to have severe cramplike pains in the lower abdomen These pains came and went for about two weeks, when she was seized with excruciating pains in the lower abdomen pronounced on the right side She felt very faint and had to vomit Her attending physician advised an operation at this time She remained in bed for ten days, occasionally having a great deal of pain, which gradually became less severe Quite frequently between the second and third months there was a slight bloody vaginal discharge During the sixth month of pregnancy she had very little pain, but from that time on she vomited a great deal and the fetal movements caused much pain At about the end of the eighth month Moore operated He found the omentum and small intestine adherent to the anterior abdominal wall, which after separating showed a large mass covered by small intestines and with lymph The mass had the appearance of a twisted pedicle cyst The cyst was about the size of a three months' pregnancy and was pushed to the left by this mass The mass was attached to the posterior surface of the right broad ligament and to the lateral pelvic wall and also extended up toward the liver being attached to the omentum in this region The colon was free from any attachment The cord from the placenta extended to the left up under the spleen where the child was found free among the intestines not surrounded by any sac The entire broad ligament with placenta was removed en masse The child weighed 5 pounds and 9 ounces and had no deformities Both mother and baby are alive

Cranioplasty—Ballin uses as a graft one-half the thickness of the body part of a rib

Texas State Journal of Medicine, Fort Worth

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Manhood of Medicine I C Chase Fort Worth—p 60
Citizen and Public Health M M Carrick Austin—p 65

West Virginia Medical Journal, Huntington

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How Make the County Medical Society Helpful J C Irons Dartmoor p 406
Internal Secretions J F Thoma Morgantown—p 409
Acute Abdomen A P Butt Elkins—p 417
Diagnosis and Operability of Exophthalmic Goiter W R Laird Montgomery—p 421
Heredity and Environment W W Brown Shenandoah Junction—p 425
Hodgkin's Disease C J Broeman Cincinnati—p 427

FOREIGN

Titles marked with an asterisk (*) are abstracted below Single case reports and trials of new drugs are usually omitted

Brain, London

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Innervation of Striped Muscle Fibers and Langley's Receptive Substance J Boeke—p 1
Relation of Hindbrain to Micturition F J F Barrington—p 23
*Lesions of Posterior Tibial Nerve C Worster Drought—p 54
Tabes Its Early Recognition and Treatment E F Buzzard—p 68
Effects Produced by Obscuring the Vision of Pigeons Previously Deprived of the One Labyrinth S Scott—p 71

Lesions of Posterior Tibial Nerve—Drought is of the opinion that injuries to the posterior tibial nerve are frequently overlooked no doubt because they cause no striking paralysis all movements at the ankle joint being normal More especially do they escape recognition when the lesion lies below the point of origin of the branches supplying flexor longus hallucis and flexor longus digitorum muscles as in such instances power of flexing the toes is retained In all wounds involving the calf where there is a complaint of pain or weakness in the foot a systematic examination must be made of sensation in the plantar area and of the functions of the intrinsic muscles of the foot When sensory disturbances of long standing are the predominant feature exploration of the nerve should be considered If the nerve shows complete interruption, the end-bulb of the upper segment should be removed or the fibrous cicatrix excised and end-to end suture performed In incomplete lesions exhibiting neuralgic symptoms the freeing of an adherent nerve will usually result in considerable relief

Dublin Journal of Medical Science

June 1921 No 16

*Acute Intussusception in Children C J MacAuley—p 241
Action of Oxidizing Ferments W G Smith—p 247
Heart in Pregnancy and Labor R J Rowlette—p 260
Method of Inducing Labor G Fitzgibbon—p 267

Acute Intussusception in Children—MacAuley analyzes twenty-three consecutive cases twenty of the patients being under 1 year Four patients died, a mortality of 17 3 per cent Excluding one gangrenous case the mortality was 14 per cent Three children died of shock within twenty-four hours after operation and one child died of bronchopneumonia In one of the shock cases there had been anesthetic collapse during the operation, requiring prolonged artificial respiration another was practically moribund (gangrenous case) at time of operation Type of intussusception enterocolic twenty cases (ileocecal and ileo-ileocecal), colic one case, enteric one case, unknown, one case

Edinburgh Medical Journal

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Postoperative Morbidity in Relation to General Anesthesia H T Thomson—p 356
Case of Double Congenital Hydronephrosis R W Johnstone and J J Browne—p 369
Statistical Survey of Tuberculosis of Skin F Gardiner—p 374

Glasgow Medical Journal

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Wound of Thoracic Duct in Removal of Tuberculous Cervical Glands G H Edington—p 398
Examination of Blood in Cases of Cancer of Breast in Regard to Operation and Prognosis E D Anderson—p 402

Journal of Laryngology, Rhinology, and Otology, London

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Some Discarded Theories and Methods P McBride—p 269
Injuries to the Ear in Modern Warfare T J Faulder—p 277
Injuries to the Ear in Modern Warfare L Colledge—p 285

Journal of State Medicine, London

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Effects of Chronic Lead Poisoning Arteriosclerosis G B Page—p 161
Infant Welfare Center as Factor in Social Evolution W J Cox—p 169
Venereal Disease Problem from Legislative Point of View J Stoddart—p 180
Legislation in Australia Relating to Venereal Disease G I Hamilton—p 189

Journal of Tropical Medicine and Hygiene, London

June 1 1921 **24** No 11

*Certain Forms of Bronchitis Clinically Resembling Tuberculosis Bronchohemisphorosis Bronchomoniliasis Broncho anaeromycosis A Castellani M Douglas and T Thomson—p 150
Differential Diagnosis in Tropical Fevers W M McDonald—p 159
*Improvised Antiseptic Adhesive Dressing J A Taylor—p 155

Bronchitis Clinically Resembling Tuberculosis—Of bronchial and broncho-alveolar affections simulating tuberculosis which however, are not due to the tubercle bacillus the authors discuss bronchohemisporosis bronchomoniliasis and broncho-anaeromycosis The fungi they have found in cases of bronchohemisporosis have been *Hemispora rugosa* Cast 1910, and *H paranugosa*, Castellani Douglas and Thomson 1921 The fungi most frequently found in bronchomoniliasis are those of the type *Monilia tropicalis* Cast, *M pinoyi* Cast, *M metalondinensis* Cast, and *M krusei* Cast The term broncho-anaeromycosis is used to denote a broncho alveolar condition, often simulating tuberculosis, in which a strictly anaerobic bacillary fungus showing transition characters between a bacterium of the genus *mycobacterium* Lehmann and Neumann (*B diphtheriae* diphtheroid bacilli) and fungi

of the genus *Nocardia toni* and *trevisan* (*Actinomyces Harz, Discomyces Rivolta, Streptothrix Rossi Doria Oospora Sauvageau* and *Radais, Cohnistreptothrix Pinoy pro parte*) has been found *Anaeromyces bronchitica* Castellani, Douglas and Thomson This obligate anaerobic bacillary fungus morphologically resembles a diphtheroid bacillus, but in special medium presents more distinct branching It is nonmotile, gram-positive not acid fast and does not produce actinomitic granules in the affected tissues Whether this fungus is the specific causative organism cannot yet be stated with certainty, but it apparently plays a certain role in the etiology of the condition as the administration of anaeromyces vaccine often causes the disappearance of all the symptoms and has a specially rapid beneficial action in hemorrhagic cases

Improvised Antiseptic Adhesive Dressing—Eucalyptus oil and guttapercha tissue are used by Taylor as a dressing and if applied with care can be made almost as adherent as ordinary adhesive plaster and in many respects has advantages over the latter Strips or pieces of any size or shape can be cut from the large sheets in which the tissue is supplied If desired only the part actually in contact with the skin need be made adhesive The oil is antiseptic and sometimes does away with the necessity for any other dressing By use of more or less oil the amount of adhesion can be regulated When removal is required this can be effected by use of more solvent without difficulty or discomfort which is more than can be said of ordinary adhesive plaster

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Mechanism of Immunization with Special Reference to Lipase J W Shaw Mackenzie—p 161
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Lancet, London

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*Surgery of Lung and Pleura III Present Position of Surgery with Reference to Diseases of Thorax G E Gask—p 1286
*Operation of Ventrifixation J E Gemmell and A L Robinson—p 1291
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Squint Question of Early Operation W B I Pollock—p 1296
*Treatment of Cases of Syphilis with a Persistent Positive Wassermann Reaction C F Marshall and A G Shera—p 1299
Open Safety Brooch in Esophagus for Nine Month C H Carroll—p 1300
Case of Locked Twins D W Murphy—p 1300
Case of Aluminum Poisoning J Spofforth—p 1301
Case of Recklinghausen's Disease F McG Loughnane—p 1301

Relation of Heart Disease and Pregnancy—The idea that a perfectly sound heart may show a murmur is so surprising to many doctors, Mackenzie says that they cannot accept it Their view seems to be that if murmurs are not organic they are functional and imply debility or some other condition of weakness That a murmur may be as physiologic as a pure sound is altogether outside the limits of this faith The detection of an innocent murmur has often supplied a reason for forbidding pregnancy or even marriage To make any progress at all it is necessary to understand wherein lies the danger associated with murmurs Most murmurs seem to arise at the valve orifices of the heart It has been demonstrated that certain damaged valves give rise to abnormal sounds, and it is evident from the appearance of the valves postmortem that the flow of blood must have been hindered on passing through the orifice or that the valves being incompetent have allowed blood to escape backwards In this way the work of the heart muscles has been hampered An additional burden being thus thrown on his heart a man leading his usual life puts a greater strain on this organ than it is fit to bear Thus it is only a matter of time until the muscle becomes exhausted and heart failure sets in But there are murmurs which do not indicate damaged valves or valves damaged to such a degree as to cause embarrassment to the heart, and it is necessary to distinguished between these murmurs and those which indicate valve damage which embarrasses the heart In this paper Mackenzie discusses in detail physiologic and functional murmurs systolic murmurs and heart failure differentiation of functional from organic murmurs, significance of systolic and organic murmurs mitral regurgitation nature of the valve changes and character of the murmur, mitral regurgitation and failure of heart muscle, mitral regurgitation with auricular fibrillation mitral regurgitation and pregnancy mitral stenosis origin and progress of the cicatrising of the mitral valves, accompanying changes in the heart muscle, cause of heart failure presystolic and systolic murmur in mitral stenosis appearance of auricular fibrillation, heart failure in mitral stenosis, and in mitral stenosis with pregnancy estimation of the significance of mitral stenosis in pregnancy aortic disease aortic stenosis and aortic regurgitation heart failure and aortic regurgitation aortic regurgitation and pregnancy

Surgery of Thorax—During the past 600 years Gask says, surgery of the chest has at times receded and at times advanced and at no period has such progress been made as occurred during the last war During that time surgeons overcame their dread of opening the closed thorax and learned to repair a wounded lung and restore it to its normal function It has also been demonstrated that in civil practice it is possible with safety to the patient and without expensive apparatus to open the chest widely and to deal with discarded processes which previously were unrelieved The evidence that has been brought forward is intended as proof that the operation of thoracotomy is a sound and reasonable one Gask submits that more and more operations on the chest should be undertaken, and that with a wider experience the operation of thoracotomy will become as useful and ordinary as that of laparotomy

Ventrifixation—The after-results of 220 cases are analyzed by Gemmell and Robinson They consider that ventrifixation is a simple and useful operation for certain types of uterine displacement Postoperative intestinal complications do not occur and subsequent gestation and parturition are not interfered with if suitable technic is employed The frequency of abortion is diminished and fertility increased The percentage of patients subjectively cured is satisfactory and the occurrence of symptoms after operation is largely due to factors beyond the control of the surgeon namely (*a*) labor (*b*) overexertion, (*c*) recurrence of infection (*d*) the menopause and (*e*) neurosis

Treatment of Syphilis with Persistent Wassermann Reaction—Marshall and Shera are of the opinion that the possibility of the Wassermann reaction remaining positive in the absence of active spirochetosis has not yet been disproved But as it is equally impossible to disprove the contrary hypothesis it is best in actual practice to regard a patient with a persistent positive reaction as one who is not definitely cured and as a subject for further observation and possibly further treatment The authors consider that a persistent positive reaction is not by itself sufficient evidence to decide the question of further treatment and that they should be guided equally by the clinical progress of the case the nature of the former symptoms and the intensity and duration of previous treatment If clinical symptoms have been present comparatively recently (say during the last twelve months) they hold that further treatment is advisable, but if symptoms have been absent for more than a year that the advisability or not of further treatment should depend chiefly upon the clinical course of the case If further treatment is decided on, this should differ materially from that given previously They suggest that sulphur should form part of this treatment without venturing on any hypothesis to explain its possible action

June 25 1921 **1** No 5104

Unsolved Problems in Gynecology and Obstetric W B Bell—p 1339
*Heart Disease and Pregnancy IV Irregular Heart Action J Mackenzie—p 1342
Epidemiology of Measles in a Rural and Residential Area R M F Picken—p 1349
Necessity of Notification of Measle R Dudfield—p 1353
Sanatorium Controls E Ward—p 1354
*Delayed Tetanus Treated with Large Doses of Anti Tetanic Serum S E Denyer—p 1356
Diverticulitis with Metastatic Suppuration W E Foggie—p 1357

Irregular Heart Action—This is the last of Mackenzie's four lectures on this subject Summarizing his remarks he says As the danger of attending pregnancy in women with heart disease is the occurrence of heart failure the physician must keep clearly before him the symptoms by which this can

be recognized The absence of a clear conception of the nature of these symptoms has too often led to a misunderstanding of their significance No sign manifested by the heart itself gives information as to the functional efficiency of the organ, and consequency the signs of heart failure must be looked for in other directions and more especially in those structures whose blood supply is likely to be reduced by the weakening of the circulation Extreme heart failure is shown by such signs as dropsy, enlargement of the liver edema of the bases of the lungs or cyanosis Early heart failure may be revealed by no sign when the body is at rest, and may only be discovered by distress evoked when some effort is made which the patient was wont formerly to perform in comfort The signs of distress, so far as women in the childbearing period are concerned, are breathlessness and palpitation Pain on effort may be present in certain cases of mitral stenosis and aortic disease, but, as a rule, the pain of grave heart failure is a sign which occurs much later in life From this it follows that no single sign shown by the heart itself however abnormal it may seem, should be a bar to pregnancy

Antitetanic Serum Treatment of Delayed Tetanus—A man aged 24, entered the hospital with inability to open his mouth He had been wounded five months before and had sustained a gunshot wound of the face, right arm, and right leg His right eye had been excised and antitetanic serum was stated to have been administered on the same day, and again a few days later On admission he was able to walk into the ward There was marked trismus, he being unable to open his mouth more than one-eighth inch, back rigid, neck stiff, and any endeavor to sit up brought on a severe spasm of the jaw No headache, temperature normal, pulse rate 100, he complained of a cough and some pain over insertion of diaphragm Slept well, no mental symptoms, tremors, or Kernig's sigh, but marked increase of the reflexes No local pain in the wounds which were healed but a local increase of reflex excitability in the muscles of the face No sore throat or difficulty in swallowing There was considerable general muscular rigidity Intrathecal, intramuscular and subcutaneous injections of antitetanic serum were given 236 500 units in all over a period of about three weeks This case illustrates the value of large doses of serum in the treatment of tetanus

Medical Journal of Australia, Sidney

May 7 1921 **1** No 19

Focal Infection and Its Limitations S Pern—p 377
*Case of Twin Tubal Pregnancy J I Hunter—p 380
Case of Malaria Infected in The Riverina New South Wales H J Clayton and L Utz—p 382

Case of Twin Tubal Pregnancy—The specimen described by Hunter was removed at operation the note accompanying the specimen stating that it was "a six weeks abdominal pregnancy which had ruptured through the fallopian tube 1 8 cm from the right cornu of the uterus" On further inquiry it was ascertained that, clinically, the case was one of ectopic pregnancy with no unusual features On examination of the mass removed at operation, it was found to consist of a uterine tube and two distinct chorionic vesicles of unequal size

May 14 1921 **1** No 20

Treatment of Acute Anterior Poliomyelitis W Vickers—p 396
*New Test of Renal Efficiency R J Silverton—p 397
Cases of Ductless Glands Therapy in Insane J Bentley—p 399

New Test of Renal Efficiency—A preliminary report is made by Silverton on the results of application of the urea concentration test (MacLean) to cases of urinary surgery On applying the test to healthy people he found that the reading usually rose to the neighborhood of 3 per cent during the second hour after the ingestion of the urea In disease the reading was lowered in proportion to the extent of renal damage The lowest reading obtained was 0 65 per cent This was in the case of a man whose kidneys proved at necropsy to be destroyed very extensively The cause was back pressure due to enlarged prostate In applying the test certain precautions are absolutely necessary The reading may be seriously influenced by the composition of neighboring meals and even more seriously should the patient ingest any fluids or solids before or during the test In all the cases tested a fixed routine was adopted in order to keep the method as uniformly accurate as possible A breakfast of 230 c c (8 ounces) of tea and one round of buttered toast was given at 8 a m At 10 a m the 15 gm of urea dissolved in 100 c c water were taken Except this nothing was eaten or drunk from breakfast until 12 noon, that is until after, the collection of the second hour's urine had been made In this manner all disturbing influences are avoided Forty-four cases of various types of prostatic obstruction were submitted to the test as well as four cases of renal tuberculosis, one case of calculous pyonephrosis and two cases of urethral stricture

Practitioner, London

June 1921 **106** No 6

Hyperthyroidism and Hypothyroidism J Barr—p 381
Medical Aspects of Flat Foot R Hutchison—p 400
Retropharyngeal Abscess Five Cases F C Pybus—p 403
Cause and Treatment of Adenoids J Kynaston—p 407
Abortive Treatment of Gonorrhea in Male H W Bayly—p 411
Red Hair and Tuberculosis W C Rivers—p 419
History of Tuberculosis H E Symes Thompson—p 426
Theory of Origin of Bacteria D Mulloy—p 435

South African Medical Record, Cape Town

May 28 1921 **19** No 10

Etiology of Scurvy A J Ortmstein—p 183
Clinical Side of Scurvy in Mine Native Laborer S Donald on—p 187

Tubercle, London

June 1921 **2** No 9

Climate and Weight of Tuberculous Patients in South India C Frimodt Moller—p 385
Lung Collapse Therapy in Connection with Pleural Adhesions F Gravesen—p 395
Bronchopulmonary Spirochetosis Report of Two Cases C J C Pull—p 401

Archives de Medecine des Enfants, Paris

February 1921 **24**, No 2

An American Colony of War Orphans Bouquier—p 103
Apparently Cleft Tongue from Overshort Frenulum V Veau and C Rupp—p 113

March 1921 **24**, No 3

Amyotrophy or Myatonia? Leenhardt and Sentis—p 137
Meningococcus Meningitis P Woringer—p 159
Hemeramosis A Leri—p 169
Duodenal Stenosis J Comby—p 175

Amyotrophy or Myatonia?—Leenhardt and Sentis report that two infants 3 and 9 months old, had developed flaccid paralysis with amyotrophy hypotony and loss of reflexes sparing the face diaphragm and smooth muscles Necropsy disclosed diffuse atrophy, without inflammatory reaction or vascular sclerosis in the motor cells of the anterior cornua of the anterior roots in the motor nerve fibers and muscle fibers The cases seem to be identical in both suggesting both Oppenheim's congenital myatonia and Werding Hoffmann's spinal myotrophy although the latter is of a familial type and begins in early infancy, is accompanied by atrophy of muscle and the reaction of degeneration and runs a progressive course The Oppenheim myatonia is not familial but congenital, and is not accompanied by true amyotrophy and the muscles feel soft and flabby, and progressive improvement is the rule The findings and course in these infants show that these two affections are akin as a chronic form of diffuse poliomyelitis in young children The literature on the subject is compared with these cases

Ventricular Form of Meningococcus Meningitis—Woringer calls attention to the insidious onset of the meningitis in the two cases he describes in infants, and the complete absence of meningococci from the spinal fluid all through the disease The meningococci were found swarming in the ventricles at necropsy in one case, and were cultivated from the puncture fluid from the ventricle in the other The primary meningococcus ventriculitis had been walled off in both cases and it proved fatal in both Direct injection of the antiserum into the ventricle generally comes too late in such cases in infants, but recovery is known in nine of forty-seven cases in children and adults

Bulletin de l'Academie de Medecine, Paris

May 24, 1921 85, No 21

Danger of Radium C Regaud —p 608
*Rehabilitation of the Wounded Dejonneau Gourdon and Thibaudeau —p 612

Rehabilitation of the Wounded—Six years have passed since vocational training of the war wounded was begun in France This communication from the Bordeaux training school states that of the 2,000 more or less crippled soldiers that have there been given training all but 33 are doing remunerative work Of the total 1 231 were able to resume their former occupation and 736 were trained for a new one The work done by the rehabilitated as a whole averages from 60 to 75 per cent of the normal output The gravity of the anatomic lesion or functional impotence does not necessarily entail a corresponding occupational handicap

May 31 1921 85 No 22

Dangers of Radium T Tuffier —p 617
Congenital Epidemic Encephalitis R Mercier Andrieux and Bonnaud —p 625
Operative Treatment of Arthritis Deformans Lejars —p 627
Tuberculosis After Industrial Accident A Broca —p 629
*Congenital Helminthiasis Neveu Lemaire —p 632
Microscopy of Uterus After Radium Treatment T Tuffier —p 635

Dangers of Radium—Tuffier here publishes the replies he has received from America in response to his questions as to injury from handling radium His replies from Cushing Halstead Brower and the Mayo brothers confirm from their extensive experience that danger can be warded off by proper precautions

Congenital Epidemic Encephalitis—Mentioned in Paris Letter on p 135

Operative Treatment of Arthritis Deformans—Lejars has added three new ones to his list of cases of pain and crippling from this cause in which the pain was abolished and partial use of the limb restored by opening up the joint and resecting or otherwise correcting conditions so far as possible These patients were two women and one heavy man in the fifties The benefit is durable, one woman in his early series has not suffered from the knee operated on during the eighteen years since

Bone and Joint Tuberculosis from Standpoint of Workmen's Compensation—Broca recalls that there is a history of visceral or glandular tuberculosis in practically every case of tuberculous lesions in bones or joints On the other hand tubercle bacilli are very rarely found in the blood in the chronic tuberculous Still another argument against the traumatic origin of bone and joint tuberculosis is his discovery that none of 500 children whom he has treated for contusions, sprains or other trauma before 1913 has developed a tuberculous process since in the region of the injury The industrial accident which every one is so prone to hold responsible for the tuberculous lesion in [illegible] probably merely revealed its unsuspected presence [illegible] argues further that the movement which reveals the pathologic condition may not be greater or more vigorous than the ordinary movements, although claimed as trauma by the subject Two important practical conclusions are evident from his data One is that every accident involving a bone or joint should be radiographed immediately this would do away with the necessity for much litigation The other conclusion is that any history of a tuberculous bone or joint affection should exempt from military service with its right to a pension for any affection declared or aggravated later than sixty days after being enrolled

Congenital Helminthiasis—Only one instance in man is cited but the suggestion is made that routine examination of infants' stools in warm countries at least might frequently reveal the ova of helminths When found before the close of the fourth week, the infestation was probably congenital

Findings in Uterus After Radium Exposures—The fibromatous uterus had to be removed two months after two applications of radium with a month's interval Letulle gives four photomicrograms of the findings They show that the destructive lesions induced by the radium expose the uterine mucous membrane to danger of secondary bacterial invasion for a time The vessels gape without tendency to become thrombosed and hemorrhage is thus liable as the eschar drops off

June 7 1921 85 No 23

Danger of Radium Broca —p 651
[illegible] from Arsenic Used in Vineyards P Cazeneuve —p 660
Small Doses of Digitalis Preparation in Treatment of Asystolia A Mauriac —p 671
[illegible] Origin of Chronic Hygromas Rochard —p 685
The Oculocardiac Reflex J Roubinovitch and J A Chavany —p 687

Dangers of Radium.—Broca presents the report of the committee appointed to study this subject It states "The dangers are real but they are easily avoidable with proper precautions for all except the manipulators of the emanation and during radioscopy But society has to have these recruits of the danger just as physicians have to expose themselves daily to contagious diseases The probability of injury is about the same in both these fields, but the dangers are faced by men who accept them in view of the importance of the task and who know the precautions to be taken"

It some of them suffer in consequence of their devotion notwithstanding the known precautions, the instances will be rare and they will be accompanied by our respect and our gratitude"

The Oculocardiac Reflex in Epileptics—Roubinovitch and Chavany use a mechanical device with which the pressure on the eyeball can be graduated They report that in fifty of eighty epileptics tested the bradycardia induced by the compression persisted for some time after cessation of the pressure In 62 5 per cent however, the bradycardia from the compression was followed by tachycardia for a minute or two This residual tachycardia as they call it, offers a new means for differential diagnosis of the tendency to epilepsy in dubious cases and may serve also as a guide in estimating the effect of therapeutic procedures

Bulletin Medical, Paris

May 14 1921 35 No 20

Digestive Disturbances of Endocrine and Sympathetic Origin G Lyon [illegible] 205 Concession in No 21
[illegible] Drugs in Dermatology Veyrieres and Ferreyrolles —p 398 Concl in

May 28 1921 35, No 22

Wounds of the Eyeball F Terrien —p 439
Treatment of Traumatic Cataract A Cantonnet —p 444
Ocular Manifestations of Syphilis C Coutela —p 446
The Principal Hemorrhagic Syndromes of the Retina R Onfray —p 450

June 4 1921 35, No 23

Early Diagnosis of Meningococcus Meningitis P Sainton and F Schulmann —p 465
*Arthritis Deformans of Syphilitic Origin C Finck —p 466

Early Diagnosis of Epidemic Meningitis—Sainton and Schulmann have found that when the lumbar puncture fluid is clear in cases suspected of meningococcus meningitis injection of 5 or 10 c c of antimeningococcus serum is liable to transform the clear fluid into the usual purulent fluid of epidemic meningitis This occurs in a few hours The antiserum induces an afflux of leukocytes and with them appear meningococci the antiserum evidently aiding in the mobilization of the latter Four typical cases are described in which this simple practical and rapid method of differential diagnosis cleared up the case at once It is especially useful in these days when atypical epidemic encephalitis may simulate the symptoms of epidemic meningitis This response to the antiserum does not occur with ordinary meningitis nor in tetanus In four cases described the meningitic symptoms were extremely grave although the puncture fluid was limpid The meningococci cluster in some focus apart and this injection of the antiserum drives them out into the open

Arthritis Deformans—In Finck's case syphilis had damaged the thyroid and parathyroids and these in turn had induced the clinical picture of chronic deforming rheumatism in the woman of 46

Bulletins de la Societe Medicale des Hôpitaux, Paris

May 27 1921 45 No 18

Mitral Insufficiency in Inherited Syphilis L Babonneix and Denoyelle —p 774
*To Ward Off Reaction to Arsphenamin etc Sicard Paraf and Forestier —p 775
Crossed Infantile Paralysis L Babonneix and Pollet —p 778

Malta Fever Dargein and Plazy —p 781 and p 784
*Necropsy in Case of Epidemic Hiccup Pierre Kahn Barbier and Bertrand —p 787
Arthritis with Micrococcus Arthriticus S Costa —p 790
*Dangers of Lumbar Puncture in Pott's Disease G Guillain and G Laroche —p 794
Acute Arterial Hypertension in Course of Typhoid A Lemierre and R Piedelievre —p 797
Neuralgia of the Face After Therapeutic Pneumothorax A Ricaldoni —p 802
*Traumatic Hematomyelia L Rimbaud and G Giraud —p 807

To Ward Off Reaction to Arsphenamin, etc—Sicard and his co-workers have been making a special study of means to ward off the shock from anaphylaxis or digestion hemoclasis They found that one of the most reliable is a preliminary intravenous injection of sodium carbonate before the injection of horse serum or an arsenical Another even more reliable means is to limit the shock reaction to one limb by applying a constricting band to the root of the limb in which the antiserum or arsenical is injected The hemoclasis occurs, but it is restricted to this limb and is harmless, while it protects the rest of the organism against further shock when the tourniquet is slowly removed five or six minutes afterward In two patients presenting constantly a severe *crise nitritoide* after every injection of neo-arsphenamin, this simple measure tided the patients past this danger point, and the course of treatment could be continued without further apprehension They coined the term topophylaxis for this procedure, "arsenical anticlasis by topophylaxis ' There was never any sign of local flocculation or precipitation in their cases In one patient a preliminary injection of 0 15 gm for the topophylaxis allowed the rest of the dose to be given directly into the general circulation a few minutes later without harm Louste added his testimony that by this topophylaxis he was able to continue the course of treatment in three patients otherwise responding with an alarming reaction to each injection of the arsenical

Necropsy in Epidemic Hiccup—This is said to be the third case of necropsy in epidemic hiccup published in Europe The woman of 52 had had paresis of the right arm for a week when dyspnea and difficulty in swallowing developed, with hiccup the mere sight of a glass of water aggravating the hiccup The woman died next day, and necropsy revealed the lesions of epidemic encephalitis only more extensive and including the upper spinal cord

Dangers of Lumbar Puncture in Pott's Disease—Such severe symptoms developed after lumbar puncture in several cases of vertebral caries that Guillain and Laroche feel compelled to warn against this method in the diagnosis of Pott's disease Paralysis of the legs followed in some of the patients They ascribe the disturbances to seeping of the fluid into the epidural space through the needle-hole The resulting change in the tension aspirates and scatters pathologic products

Traumatic Hematomyelia—In the woman of 40 the injury from an automobile accident entailed the Brown-Sequard syndrome with dissociation of sensibility suggesting syringomyelia, fatal the ninetieth day

Paris Medical

June 4 1921 **11** No 23

*Infectious Diseases in 1921 C Dopter —p 437
*Serotherapy in Pneumonia E Sacquepee —p 443
*Infection with Morgan's Bacillus in Adults A Besson and De Lavergne —p 449
*Epidemic Encephalitis in the Pregnant R Jorge (Lisbon) —p 454
Contagiousness of Epidemic Encephalitis C Dopter —p 458

Infectious Diseases in 1921—In this survey, Dopter cites among the more interesting recent works on infectious diseases the report of Levaditi and Harvier on experimental epidemic encephalitis, induced in rabbits by inoculation with brain spinal cord or optic nerve tissue from clinical cases of the disease The filtrable virus seems to be absent from the blood, bone marrow, lungs, kidneys, spleen and liver and rabbits bore without harm inoculation in the peritoneum veins and trachea and also in the intact nose When the nasal mucosa was scarified inoculation was successful as also in the brain, eye, testicle or peripheral nerves The virus retains its virulence after desiccation in a vacuum even *in contact with sulphuric acid or potassium hydroxid* Successive passages through rabbits render the virus pathogenic for monkeys, guinea-pigs and mice Their research has disproved any specific relations between the virus of this encephalitis and of poliomyelitis Dopter's paragraph devoted to yellow fever summarizes Noguchi's communications in THE JOURNAL

Serotherapy in Pneumonia—The mortality was 5 4 per cent in the thirty-seven cases of pneumonia in soldiers given serotherapy In three cases the wrong strain was used, in some other cases coincident purulent pleurisy seemed to annul the action of the antiserum

Infection with Morgan's Bacillus—Besson and De Lavergne cultivated Morgan's bacillus from some cases of simple diarrhea in soldiers, and they found it also in pure culture in a case of fatal choleriform enteritis

Epidemic Encephalitis in the Pregnant—Jorge has compiled an obstetric series of twenty-seven cases, including Schultze's case in THE JOURNAL in 1920 The pregnancy seems to render the prognosis graver, but the evidence does not show any promise of improvement from emptying the uterus In some cases the absence of pain at labor was commented on In one case reported from Coimbra the child was in deep cyanosis when born and exhibited abdominal myoclonus of the same type and localization as the mother and other signs of epidemic encephalitis The mother died but the child rapidly threw off the disease Santi has published a similar case of congenital epidemic encephalitis only that the disease was mild in the mother and she promptly recovered, while the infant died in a few days, necropsy revealed the typical lesions of the disease These two cases demonstrate that the virus must circulate in the blood as otherwise it could not pass through the placenta

Presse Medicale, Paris

June 11 1921 **29** No 47

Myoclonic Uremia H Roger and A Chaix —p 461
*The Bacteriophagum F d Herelle —p 463
*Neuromuscular Electric Excitability A Strohl —p 464
Treatment of Acne A Survey L Chemisse —p 466

Bacteriophagum Conferring Immunity—D Herelle reports the result of further research on the bacteriophagum His preceding work was described recently in the editorial on page 126 He now announces that not only clinical improvement coincides with the appearance in the feces of a strong bacteriophagic action but that it is possible to immunize against the disease by injection of the bacteriophagum active against the causal bacterium As convalescence develops, a bacteriophagum appears in the stools active against the pathogenic bacteria involved and this bacteriophagum can be cultivated indefinitely in vitro at the expense of the pathogenic bacteria When it is injected into other subjects the pathogenic bacteria are unable to proliferate and it is thus possible to confer immunity He has been experimenting mainly with avian typhoid and hemorrhagic septicemia in cattle and plague in rats Avian typhoid is an extremely contagious disease in domestic fowls He experimented in twenty five poultry farms with a total of 2 100 fowls Each had lost during the preceding two weeks from 20 to 50 per cent of the fowls from the disease Then 600 fowls were given by ingestion 1 c c of a culture of the bacteriophagum active against *B gallinarum* and 1 500 were given a subcutaneous injection of 0 5 c c of the same culture Not one of these fowls in these twenty-five poultry farms died thereafter while the epizootic continued to decimate the other poultry farms in the vicinity Even more convincing results were obtained with hemorrhagic septicemia in 100 buffaloes or young bulls in Indo-China This disease kills inevitably in twenty-four hours, but injection of 0 25 c c of the "bacteriophagum anti" conferred immunity to such an extent that the animal could bear without harm test inoculation with a culture of the pathogenic bacterium a thousand times the positively lethal dose Rabbits can also be rendered refractory to dysentery toxin in the same way and in seven cases of grave dysentery in man injection of 1 c c of an antidysentery bacteriophagum was followed in from twenty-four to thirty-six hours by the disappearance of blood and bacilli from the stools

Measurement of Neuromuscular Excitability—Strohl gives an illustrated description of the egersimeter he has devised for this purpose

June 15 1921 **20** No 48

*The Hemoclasic Reaction in the Pregnant Didier and Philippe—p 473
Topography of Small Intestine A C Guillaume—p 474

The Liver in Pregnancy—Didier and Philippe report the findings with the latest methods of testing the functioning of the liver in twenty six apparently healthy pregnant women Impairment of the protolopexic function of the liver was evident in only 35 per cent after test ingestion fasting of 200 gm of milk Glucose and lactose were found constantly in the urine of twenty-two women at or close to term and the hemoclasis reaction showed that the liver was responsible in 60 per cent of these cases

Topography of Small Intestine—The location of the loops was recorded in forty cadavers and in 270 hernia cases, and compared with the roentgen ray findings The topography seems to be remarkably regular certain loops are almost invariably to be found in certain locations in both the living and the dead One of the instructive measures applied was the driving deep into the cadaver long fine needles at certain definite points

Progres Medical, Paris

June 4 1921 **36** No 23

*Hour Glass Stomach P Ramond C Jacquelin and Borrien—p 265
Surface Tension and Viscosity of the Blood During Anti Anaphylaxi P Arloing and P Nauthey—p 267
Metrorrhagia in Young Girls Daiche—p 269
Lepsin and Gastric Organotherapy G Paroy—p 270

Hour-Glass Stomach—Ramond and his co-workers say that during the preceding month they found three cases of biloculation of the stomach at necropsies of adults but they accept this as a cadaveric phenomenon In one of their clinical cases a woman of 43 had had symptoms suggesting a gastric ulcer twenty years before but these became attenuated and symptoms indicating merely hour-glass stomach followed The operation after twenty years of these revealed functional constriction The primary ulcer had healed completely but the functional disturbance it had entailed had persisted indefinitely Spasmodic contraction may occur as a ring or as a niche projecting inward, an invagination from reflex action, either from an ulcer opposite or cholecystitis, duodenal ulcer appendicitis or painful salpingitis It had persisted in one of their cases for four years to the death of the patient This narrow deep invagination in the wall of the greater curvature from reflex action with a cancer, gradually broadens as the walls lose their elasticity until the gap in the outline of the stomach shadow becomes rounding and is mistaken for the cancer itself This is the reason why radiologists locate the cancer as a rule in the greater curvature when in fact the cancer is on the wall opposite If biloculation from organic cause requires treatment it has to be surgical They describe the various clinical pictures encountered and means to remedy conditions

Revue de Medecine, Paris

February 1921 **38** No 2

Idiopathic Dilatation of the Esophagus F Bensaude and G Guenaux—p 65
Nitrogen and Cholesterin in the Blood in Migraine Remond and Rouzaud—p 97
Paroxysmal Congenital Cyanosis in Infant M Pehu and L Langeron—p 113

Diffuse Dilatation of the Esophagus—Bensaude and Guenaux give the details of six cases of idiopathic enlargement of the esophagus and of one with atony which demonstrates the analogy between atony and dilatation of the esophagus in such cases Cardiospasm is by no means a constant finding with idiopathic dilatation and there is much to sustain the assumption that the tendency to dilatation is due to some derangement of the innervation of the esophagus and cardia modifying the peristalsis of the former and the contraction of the latter Spasm of the pylorus has frequently coincided with spasm of the cardia in their experience The diffuse enlargement of the esophagus invites malignant disease cancer developed in two of their six cases The diagnosis is not always easy even with roentgenoscopy, as they show with typical roentgenograms In one young man an ulcer at the cardia was responsible for the dilatation fatal perforation followed too vigorous attempts to open a passage through the cardia Persons with this idiopathic dilatation get accustomed to it and seldom consult a physician until all solid food is arrested, in two of the cases reported the discovery of the dilatation was a surprise during roentgenoscopy for some other reason There may be a sensation as of a ball or an insect in the throat, which diverts attention being accepted as an indication of hysteria Some of their patients were obliged to sleep semiseated to prevent vomiting on reclining In one case abortion had been induced as the uncontrollable vomiting had been ascribed to the pregnancy relief was finally obtained by gastrostomy and retrograde dilatation of the cardia In another case the supposed dilated esophagus proved to be the congenitally intrathoracic stomach

The Nitrogen and Cholesterin Content of the Blood in Migraine—Remond and Rouzaud have been applying tests of liver and kidney functioning in forty-six cases of migraine between attacks Their findings show that far from being perfectly well between attacks' as some textbooks say azotemia and cholesterinemia and low blood pressure indicate that liver kidneys and heart are temporarily or permanently below par A tendency to sagging kidney is also common with migraine Treatment of migraine should be much the same as for gout dietetic exercise in the open air etc Drugs to stimulate the liver add another poison to those already in evidence but sodium sulphate or sodium citrate in small repeated doses may render good service and liver and bile organotherapy even more A vigorous course of alkaline mineral waters is one of the most useful weapons in our arsenal A sagging kidney should be fastened in place this alone may suffice to ward off further attacks A connection with thyroid or ovarian insufficiency is evident in some cases and these benefit from the proper organotherapy

Schweizerische medizinische Wochenschrift, Basel

May 26 1921 **51**, No 21

*Osmotic Hemolysis E Reicher—p 481
Local Anesthesia in Treatment of Fractures E Hagenbach—p 488
Paraplegia in a Syphilitic L Monfrini—p 490
Greasing the Sole to Obtain Outline for Flat Foot Inlay H Debrunner—p 493

Toxic Injury of Blood Corpuscles—Reicher tested the resisting power of the erythrocytes to various hypotonic salt solutions in various diseases and tabulates the findings She emphasizes that the blood corpuscles are easily accessible surviving organs which allow a glimpse into the actual condition of the body cells at the moment Her tables confirm that the toxic substances generated in infectious diseases injure the cells of the body as evidenced in the prompter taking of the blood, and that this occurs likewise in conditions of undernourishment The fluctuations in osmotic hemolysis parallel the corresponding injury of the tissues and hence these readings throw light on the biologic process and on the prognosis Reicher is assistant in Sahli's medical clinic and the tests were applied to nearly 100 subjects including nine over 60 In the normal hemolysis begins at the 0 46 or 0 44 per cent solution of sodium chlorid Total hemolysis occurs at 0 36 to 0 30 per cent In the aged, hemolysis began between 0 52 and 0 60 per cent and was complete at 0 32 to 0 40 per cent saline Each of the set of test tubes contains 20 mm of blood and 3 5 c c of physiologic sodium chlorid solution differing in concentration by 0 02 per cent The reading occurs in ten minutes and again at the second and twenty-fourth hours at room temperature The blood is allowed to lie along the walls of the tube for a few seconds to oxygenate it before the saline is gently added

Riforma Medica, Naples

May 28 1921 **37** No 22

Hemorrhagic Leukemic Infiltration in Thigh Muscles Taddei—p 505
Apparatus for Determination of Tension of Alveolar Gases A Barlocco—p 507
*Action of Thermic Stimulation of Skin on Mucosa of Trachea and Bronchi V Azzi—p 509
Fracture of Base of Skull C Righetti—p 511

Therapeutic Anaphylaxis E Pesci —p 514
*Cancer of Rectum E Alevoli —p 517

Variations of Temperature of Mucosa of Air Passages to Correspond to Thermic Stimulation of Certain Areas of the Skin—Azzi adds five clinical experiments and a further series on animals to his previous series which have all been concordant in demonstrating that the expired air (and hence the lining of trachea and bronchi) has its temperature reduced by from 0.4 to 0.6 of a centigrade degree when certain regions of the skin are chilled. This occurs although the general temperature may show no decline. The drop in temperature is transient but it testifies to the parallel vasomotor phenomena in the skin and in the mucous membrane of the entire respiratory tract, vasodilation in one being accompanied by vasodilation in the other and the same holds good for vasoconstriction. The respiratory mucous membrane can therefore be regarded as forming part of the peripheral circulation. These phenomena explain pneumonia after chilling, for example, and the peculiar liability to secondary infection after tracheotomy. One practical conclusion from this research is the advantage of applying ice to the skin to arrest hemoptysis. Empiric revulsion to the skin inducing local hyperemia starts the same process of hyperemia in the air passages. Azzi's previous report on this subject was summarized June 11, 1921, p. 1713.

Cancer of the Rectum—Alevoli compares some recent works on the technic for operative treatment of malignant disease of the rectum especially by the combined abdominal and perineal route.

Brazil Medico, Rio de Janeiro

May 7, 1921, **35**, No. 19

*Carcinoma in Nail Matrix of Big Toe C Pinheiro Chagas —p 233
Milk and Infant Mortality Mariano Cursino —p 235
Plans for Child Welfare Exposition Moncorvo Filho —p 236

Cancer in Nail Matrix—Pinheiro comments on the rarity of malignant disease originating in the nail. The textbooks scarcely mention it, and Heller could compile in 1900 only three cases for his work on disease of the nails; one was on the hand. In the case here illustrated in a laboring man of 60 the toe had been injured in an accident eighteen years before the epithelioma developed in the nail matrix of the big toe.

Gaceta Medica de Caracas

March 15, 1921, **28**, No. 5

Indirect Campaign Against Venereal Disease Medina Jimenez —p 55
*Bilharziasis and Its Treatment J Quintini M —p 56
*Serotherapy of Mumps J de D Villegas Ruiz —p 60
Delbet's Vaccine Therapy Rizetti —p 61 Idem Villegas Ruiz —p 64
Splenomegalia F A Risquez —p 65

Bilharziasis—Quintini has been giving tartar emetic to nine patients with bilharziasis, beginning with injection of 2 cg. to a total of 108 cg. in the course of one or two months. The cases were of the pseudodysentery febrile or liver types and great improvement was the rule; no ova being found in the stools thereafter; three specimens examined on alternate days. The debility was extreme in one man with hookworm and ascarids in addition to *Schistosoma mansoni* and he died in two days after the course was begun. Seven other patients failed to complete the course. In some of the patients the injection caused nausea, cough or chilliness but this was easily prevented by giving a little codein an hour beforehand.

Diphtheria Antitoxin in Treatment of Mumps—Villegas quotes some French and Italian clinicians who treated mumps in young men with injections of diphtheria antitoxin hoping in this way to ward off complicating orchitis. One reported series of twenty-six cases without orchitis; another a series of seven cases, and another only 5 per cent., in sixty cases. These figures encourage further trials when compared with ordinary statistics which show orchitis on an average in 20 per cent. of the cases of mumps, with resulting atrophy of the testicles in 50 per cent. of those involved.

Revista de la Asoc. Medica Argentina, Buenos Aires

January to April 1921, **34**, No. 195-198

Consequences of Vagotomy in Guinea Pigs L Giusti and B A Houssay —p 7
Fatty Degeneration in Fetus P I Elizalde and J J Puente —p 10
Experimental Destruction of Suprarenals L Giusti —p 15
*Pituitary Extract and Motor Function of the Stomach J C Galan —p 20
*Contradictory Action of Pituitary Extracts B A Houssay —p 23
Suprarenals Do Not Modify Action of Pituitary Extracts Id —p 26
Nervous Factor in Water Diuresis O M Pico and J J Murtagh —p 28
Ammonia Gas Poisoning M R Castex Romano and Galan —p 33
Tuberculoma in Cerebellum I Allende and T Martini —p 48
Work of Austrian Red Cross in Fighting Epidemics S Mazza —p 71
Sarcoma of Conjunctiva A Oyenard —p 87
Hydatid Cyst in Vertex of Orbit A Tiscornia —p 92
Flat Sarcoma of the Choroid R Argañaraz —p 101

Acute Fatty Degeneration in Fetus at Term.—Elizalde and Puente found signs of acute fatty degeneration in the parenchymatous organs of a child delivered by cesarean section after two days of ineffectual labor. They ascribe this acute degeneration to the effect of the ether given the mother, and the injury from the protracted labor. Deficient oxygenation in itself has a tendency to induce fatty degeneration.

Effect of Pituitary Treatment on the Stomach—Galan's tests of the action of pituitary extract on the surviving stomach of the frog, cat, dog, rabbit, guinea-pig and white rat confirmed that it stimulated motor functioning of this organ as also in the natural stomach of the dog when injected by the vein.

Pituitary Extracts—Houssay explains how these extracts may differ in their action according to mode of preparation and deterioration with age as well as with the dose, the species of animal and the modification of the effect by anesthetics.

The Nervous Factor in Diuresis from Water—The output of water after ingestion of a given amount was found to differ considerably in normal dogs and dogs that had had the nerves innervating the kidneys severed.

Melanosarcoma of the Conjunctiva—The case described in the man of 50 is the only one encountered in the ophthalmologic service at Buenos Aires in the last fifteen years out of a total of 100,000 applicants.

Hydatid Cyst of Orbit—The location of the cyst in the apex of the orbit rendered the differential diagnosis puzzling and required a Kronlein operation to reach it.

Flat Sarcoma of the Choroid—Argañaraz states that thirty-two cases of sarcoma of the uveal tract have been encountered at the eye clinic at Buenos Aires during the thirty-five years of its existence up to 1915 but no instance of diffuse 'surface" sarcoma. Since then two cases of the latter have required enucleation. Fuchs has compiled only four of the kind in European literature. In Argañaraz cases one patient was a man of 30; in both cases the melanotic sarcoma lay like a shell around the choroid encircling more than half of its circumference. Vision is completely lost before glaucoma develops; one of the patients was blind for a year before any other symptom attracted attention. The loss of vision is usually rather abrupt.

Revista Medica del Uruguay, Montevideo

May 1921, **24**, No. 5

Petromelia of Legs in New Born Infant M Armand Ugon —p 201
*Endocarditis Consecutive to Abortion C I Colistro and M Silva Ferrer —p 203
*Serotherapy in Pregnancy Toxicoses F Cortabarria —p 210
Intestinal Hemorrhage in Young Infant C Pelfort —p 218

Septic Endocarditis Secondary to an Abortion—The clinical history of the case reported supplemented by the necropsy findings showed that the woman had borne her old mitral stenosis for many years with perfect compensation through two childbirths. Then came a septic abortion with embolism, the embolus lodging in the mitral valve, with septic endocarditis and further embolism, the embolus this time lodging in the brain. Evidences of a latent tuberculous process in the lungs were found likewise, confirming that mitral stenosis plus tuberculosis does not interfere with normal pregnancy and childbirth so long as secondary infections can be warded off.

Serotherapy in Pregnancy Toxicoses—Cortabarria states that no benefit followed injection of serum from a healthy pregnant woman in the first of the two cases of pregnancy

intoxication he reports This was the tenth pregnancy of the woman of 30, and she had had jaundice and pruritus at each with other signs of insufficiency of the liver Under calcium chlorid and epinephrin the pruritus subsided somewhat The second patient had uncontrollable vomiting, and this too proved refractory to injection of serum from a healthy woman at the fifth month of a pregnancy He accepts jaundice in cases of uncontrollable vomiting as warning to empty the uterus at once

Semana Medica, Buenos Aires

April 28 1921 **28** No 17

*Hydatid Cyst in Uterine Wall A Chueco —p 481
Induced Pain as Sign of Kidney Calculus J R Goyena —p 487
*Epithelioma of Male Urethra S Barabino Amadeo —p 488
*Protein Therapy of Hypopyon Almeida Huerta —p 502

Cyst in Posterior Wall of Uterus—Chueco comments on the difference between the precautions required at a laparotomy opening up a focus of infection in the adnexa for example and opening up a focus through the vagina With the latter route, if the focus should be ruptured and infectious material scattered it would do no harm in comparison to the consequences of such a rupture scattering infectious material over the peritoneum This reasoning guided him in the case of the large intramural hydatid cyst here described, in a virgin of 15 The exploratory laparotomy revealed the huge cyst but Chueco then closed the abdomen and attacked the cyst through the vagina

Differential Pain with Calculus in Kidney—Goyena recalls the diagnostic importance of the pain induced in the kidney by percussion of the lumbar region Percussing from the eighth dorsal vertebra when the kidney region is reached the patient exclaims with the sharp sudden pain induced If there has already been an attack of pain suggesting kidney colic this sign differentiates the cause With any abdominal affection percussion of the lumbar region will usually elicit more or less painful sensations but nothing like the severe, deep visceral pain experienced with nephrolithiasis

Epithelioma of Male Urethra—Barabino reports a case with photomicrograms and necropsy findings It was inoperable when first seen in the man of 53 He discusses the early symptoms in such cases emphasizing their vague character and the necessity for routine endoscopy and microscopic examination of an excised scrap as the only means for detection in time to arrest the malignant disease

Protein Therapy of Hypopyon—In the case described, in a man of 35 the hypopyon had developed after contusion of the eye It retrogressed after five intramuscular injections of 10 cc of milk but traumatic cataract developed later

Archiv fur Gynaekologie, Berlin

1920 **114** No 1

*Duration of Pregnancy from Medicolegal Standpoint C Ruge —p 1
*Genital Tuberculosis in Women R Kundrat —p 51
*Endogenous Infection in Gynecology R Salomon —p 105
Operative Treatment of Retroversioflexio Uteri A Seitz —p 141
Volume of the Blood During Pregnancy A Mahnert —p 168
Theory as to Origin of Vesicular Mole Hinselmann —p 197

Duration of Pregnancy—Ruge declares that it is impossible to calculate exactly the duration of pregnancy even when the date of reception of the sperm is known as several days may elapse before actual conception The development of the child, furthermore is no criterion A period of less than 230 days is out of the question when the child shows the more important signs of maturity He presents an array of data to sustain the view that the period preceding 302 days before birth might be accepted as the period of conception The legally accepted limit for the period of conception in paternity litigation in Germany is now from the one hundred and eightieth to the three hundred and second day before birth

Genital Tuberculosis in Women—Kundrat analyzes the pathologic findings in sixty-six operative cases of tuberculosis of the female internal genital organs and compares them with the literature

Spontaneous Infection in Gynecology—Salomon presents evidence of the occurrence of spontaneous endogenous infection in gynecologic cases In some he here discusses in detail this was manifest in 11 1 per cent Bacteria living in the vagina or cervix in a previously latent state, suddenly acquire virulence as the immunity balance is upset from any cause and the defensive forces are no longer able to hold them in check He adds that before any gynecologic operation which will be liable to upset the immunity balance the vagina should be examined for virulent micro organisms, the blood for their toxins, and the antibody titer determined The physician must aim to exclude endogenous infection by rendering the bacteria in the vagina harmless, and artificially enhancing the immunity forces by an autovaccine made from the vaginal bacteria, and he must be the one to decide when the patient is ready for the operation

Archiv fur Kinderheilkunde, Stuttgart

May 21 1921, **69**, No 5

*Fate of Children with Congenital Syphilis C Husten —p 319
Rare Malformation of Heart A Godel —p 357
*Prognosis of Acute Poliomyelitis F Wahler —p 343
Febrile Reaction to Vaccination F Weil —p 351
*Rachitic Dwarf Growth P Gerstl —p 357
*Enlarged Heart as Child Body Grows F M Groedel —p 365
Abdominal Pains in Children A Peiper —p 378 Cont'd

Fate of Children with Congenital Syphilis—Husten emphasizes the necessity for enforcing compulsory treatment of children with congenital syphilis In his experience at Freiburg with thirty nine cases in the five years ending 1918 half the children soon died from intercurrent disease, and only sixteen are known to be living now A third died of those given partial treatment but only one of those given thorough courses Of the fourteen still living and reexamined personally 50 per cent are imbeciles or idiots Most of the children with congenital syphilis had been brought to the clinic on account of some casual infection, and it proved impossible to convince the parents of the necessity for persevering treatment of the syphilis He endorses the bill now pending in the legislature which makes notification compulsory for all children born with congenital syphilis, and also makes treatment of venereal diseases compulsory and gratis This would of course include infants with congenital syphilis as well as adults

Prognosis of Acute Poliomyelitis—Wahler says that unless a tendency to improvement is evident by the time the child is dismissed from the hospital there is not much hope of improvement later No benefit was apparent in such cases even after months of orthopedic and surgical measures and no improvement has been found in those examined from two to six years later On the other hand those that displayed the slightest change for the better at the close of the acute stage have gone on improving since The dispensary and orthopedic treatment applied for months may have contributed to this or have been the decisive factor

Rachitic Dwarf Growth—The prematurely born child died when a year old weighing only 2780 gm and measuring 49 cm The stunting of the growth was probably traceable to the rachitis supplemented by digestive disturbances and splenomegaly of the Gaucher type the latter running an acute course

The Heart in the Growing Body—Groedel has found what he calls the heart quotient—the ratio between the width of the heart and the width of the lungs at the base—very instructive in clinical cases The width of the lungs at the base is usually proportional to all those factors which might have a physiologic influence on the diameter of the heart This quotient is usually 1 19 in both children and adults He discusses here what happens as the child grows when its heart is primarily hypertrophied The heart quotient may gradually approximate normal as the child becomes a youth or the pathologic proportions may be maintained He cites an example of each type

Beitrage zur klinischen Chirurgie, Tubingen

1921 **121** No 3

*Suppuration in the Knee A Lawen —p 479
*Wounds of the Brain F Demmer —p 491
Physiology of Concussion of the Brain Breslauer Schuck —p 590
The Mechanism of Concussion of the Brain H Rahm —p 593
Mechanism of Bursting of the Intestine W Schonleber —p 597
Operative Treatment of Diverticulum of the Esophagus H Lupke —p 612
Actinomycosis of the Salivary Glands E Schwarz —p 629

*Results of Operations for Cancer E. Brattstrom—p. 636
*Mammary Cancer W. Boss—p. 642
Luxation of the Clavicle W. Boss—p. 679
Fracture of the Patella F. von der Hutten—p. 687
Traumatic Destructive Focus in the Scaphoid Bone F. von der Hutten—p. 704
Histology of Plastic Induration in the Penis O. Wiedhopf—p. 712

Suppuration in the Knee—Lawen describes five cases showing the fine results that can be obtained with severe suppuration in the knee rebellious to ordinary measures, when the joint is opened by an incision from the side with horizontal resection of the posterior condyle of the femur. The article is illustrated.

Wounds of the Brain—Demmer reports from Hochenegg's service the ultimate outcome in 255 cases of injuries of the skull 1910-1914 and of fifty-two gunshot wounds of the skull in addition to a large number of war cases and of concussion of the brain. All this material confirms the great importance of lumbar puncture as an aid in diagnosis and in relief of pressure on the brain particularly with concussion of the brain. With an actual wound of the brain, the results have been far better since the practice has been adopted of enlarging the opening in the skull to have the diameter of the cavity the same at all depths. This cavity is then packed with a moist, incompressible tampon of the Mikulicz type. This is covered with a firm bandage and the brain is drained by repeated lumbar puncture. The article is illustrated and the fine results emphasized. The present condition in fourteen of these thirty-four tampon cases three years later shows that all have had their earning capacity restored and their symptoms have subsided completely or very nearly so. No attempt at a plastic operation has been made yet and the defect has completely healed. Some wear a protecting pad and except for occasional slight headache, dizziness and tinnitus all seem to be in good condition, three have slight impairment of the memory and one in concentrating his attention. Some other patients have not been heard from but the results in all from whom reports have been received are most gratifying and confirm the value of this tampon-lumbar puncture treatment.

Results of Operations for Cancer—Brattstrom gives the ultimate outcome in 210 cases of mammary cancer given operative treatment between 1905 and 1915. Sixty-three have been cured. In five cases a primary tumor was found in other organs at the time or soon after. For the last two years roentgen exposures have been systematically given after the operation.

Prognosis of Mammary Cancer—Boss obtained the best results with operative measures in the cancers of the scirrhus type while the medullary cancers proved more malignant. Only two have been free from recurrence of the eight medullary cancers given systematic roentgen exposures after mammectomy.

Deutsche medizinische Wochenschrift, Berlin

May 26, 1921, **47**, No. 21

Appendicitis H. Kummel—p. 581 Cont'd
Transplants to Bridge Nerve Defects Cassirer and Unger—p. 586
*Skin Tube to Close Artificial Anus E. Unger and F. Schwabe—p. 587
*Treatment of Perforating Ulcer of Foot L. Kleinschmidt—p. 588
Idem E. Nordmann—p. 588
Phagedenic Suppuration of Lymph Glands in Groin G. Wolff—p. 589
Prostheses for Short and Pathologic Stumps of the Leg M. Bohm—p. 589
Recording of Angiospasms Hinselmann and Haupt—p. 590
Cadaver Position of the Vocal Cords J. Fein—p. 591
Parasyphilis L. Arzt and W. Kerl—p. 592
Abortive Treatment of Syphilis Blanck—p. 592
Quaker Food Distribution and Rohrer's Index Bokofzer—p. 593
Studies on Infantile Gonorrhea I. E. Valentin—p. 594
Eye Injuries Resulting from Skiing J. Strebel—p. 595
Modern Cancer Treatment O. Strauss—p. 597
Vomiting and Obstipation in Children L. Langstein—p. 599

Skin Tube to Shut Off Artificial Anus—Unger and Schwabe applied the technic that has been devised for cinematization of amputation stumps, making a tube out of a bridge of skin rolled up and sutured to form the tube the ends still attached. The middle of the tube was drawn through under the colon and out through the skin and sutured to the opening in the skin beyond the colon. The outer wall at this elbow was cut across and a rod was inserted in each leg of the skin tube. A pad was worn which pressed the colon against these rods thus closing the lumen of the intestine. They have applied variations of this method in three cases and it seems feasible, they say. Two illustrations show the technic.

Treatment of Trophoneurotic Ulcer of the Foot—Kleinschmidt reports surprising success with roentgen-ray treatment in two cases of rebellious perforating ulcer of the foot in syphilitics one with tabes. The lesions healed completely after a single full dose in one and in the other after two full doses. E. Nordmann reports an operative case of recurring trophoneurotic ulceration of the foot after a war wound of the sciatic nerve with paralysis of the leg. He exposed the saphenous nerve and the saphenous vein down to the ball of the big toe where they were divided and shifted to a tunnel made for them in the soft parts median from the ulcer. In three months the ulcer had healed completely, and the skin of the foot now looks more natural. O. Nordmann had previously reported a case of rebellious perforating ulcer of the foot after injury of the tibial nerve in which complete cure followed the shifting of the external popliteal nerve.

Munchener medizinische Wochenschrift, Munich

May 20, 1921, **68**, No. 20

Syphilis Rejuvenation Hypothesis B. Romeis—p. 600
Lymph Gland Ferments and the Wassermann Reaction W. Gennerich 603
Concentration of Roentgen Rays Treckel and Sippel—p. 604
Active Immunization Against Syphilis K. Hilgermann and W. Krantz 605
Mastoid Injuries W. Schaedel—p. 607
Operation in Contracted Bladder H. Florcken—p. 611
Clinical Aspects of Spinal Tumors F. W. Taschenberg—p. 612
Typical Pathologic Condition of the Second Metatarsophalangeal Joint Keller—p. 614
Isolated Laceration of Iliac Artery from Contusion J. Dubs—p. 614
Technic for Roentgenologic Services O. Hahn—p. 615
Treatment of Puerperal Mastitis A. Kreeke—p. 617

Wiener klinische Wochenschrift, Vienna

May 19, 1921, **34**, No. 20

D'Herelle's Bacteriophagum Intestinale Considered from the Standpoint of Typhus O. Bail—p. 237
Leukemic Leukemia N. Jagic—p. 238
Pathology of Electric Current Burns S. Jellinek—p. 239
Invagination of Meckel Diverticulum L. Depisch—p. 240
Phototherapy in Rachitis P. Erlacher—p. 241
Arteriosclerosis F. Weinfurter—p. 242

Phototherapy in Rachitis—Erlacher reports the results of the Hanau method of quartz lamp treatment in forty-six cases of rachitis. The patients ranged from 1 to 7 years of age. Every month comparative roentgenograms of the epiphyses of the right forearm were made. In all cases that could be thus controlled there was an undoubted improvement in the clinical picture in most cases a complete cure was effected. At first the treatment was applied every second day but of late he has given daily treatments. He begins with five minutes each to the abdomen and back at one sitting. The time is lengthened by two minutes at each sitting until fifteen minutes each is reached. No ill effects of the treatment were noted. No changes in diet were ordered and no medication was employed. The number of sittings was usually from forty to sixty. The roentgenograms established the fact that the bones were becoming harder and firmer. The initial softness of the bones should, of course be taken advantage of to straighten curvatures and correct deformities, while irradiation is continued, so that when the bones become firm they may be in the corrected position.

Zeitschrift fur klinische Medizin, Berlin

1920, **89**, No. 5-6

Peptone Test of Gallbladder Function W. Stepp—p. 313
Derangement of Heart Impulse. Rehfisch—p. 345
*Bone Disease of Central Nervous Origin S. Robinski—p. 361
Effect of Military Service on Blood of Indoor Worker A. Rothacker—p. 387
Typhoid and Five Day Fever in Army Corps H. Dembowski—p. 410

Peptone Test of Gallbladder Functioning—Stepp confirms that the contents of the duodenum during periods of fasting contain little if any bile from the resting gallbladder. He starts up the flow of bile by injecting through the duodenal tube 30 c.c. of a 5 or 10 per cent. solution of peptone. The gallbladder is stimulated by this and bile always poured into the duodenum in his experiments on fasting healthy

people The dark colored bile was free from leukocytes With disease of the gallbladder there is no reaction of this kind to the peptone, or if it occurs the bile thus derived contains more or less other pathologic elements With mechanical obstruction no bile can be obtained in this way In three patients whose gallbladder had been removed, this test brought a partial response, confirming that the bile ducts may enlarge to serve as reservoirs for bile

Derangement in Conduction of Heart Impulse—Rehfisch discusses the mechanism for certain changes in the electrocardiogram and their significance In a case described with bradycardia from partial heart block, a peculiar arrhythmia developed, a *doppelsinn des intervalls*

Bone and Joint Disease in Disease of Central Nervous System—Robinski analyzes the bone and joint processes liable to develop in tabes and syringomyelia, commenting on the resemblance between the processes in the two However, tabetic disturbances occur more frequently in legs than in arms while with syringomyelia the arms are usually involved, and the patients are almost exclusively men and the process is generally restricted to a single side His findings confirm that fractures do not occur spontaneously in long bones unless the bone is already pathologic In estimating fractures in connection with industrial accidents, he warns that the physician's task is to record his objective judgment He is not to plead the cause of the injured The study of bone and joint affections and of spontaneous fractures in internal disease is extremely important for our estimation of industrial or other accidents as he explains in detail, with seventy bibliographic title references

Zeitschrift fur Tuberkulose, Berlin

May 1921 34 No 3 4

*Organized Campaign Against Tuberculosis F Helm —p 161
*Pathologic Anatomy of Pulmonary Tuberculosis S Graff —p 174
*The Leukocytes in Pulmonary Tuberculosis E Romberg —p 191
Droplets in Spread of Tuberculosis C Flügge —p 212
Increase in Tuberculosis During War M Kirchner —p 228
Tuberculosis in Bavaria K E Ranke —p 272
China Workers and Tuberculosis Thiele —p 303
*Immunity to Tuberculosis F Neufeld —p 312
*Conservative Treatment of Surgical Tuberculosis A Bier —p 329
*Surgery in Pulmonary Tuberculosis F Sauerbruch and A Brunner p 335
Destruction of Tubercle Bacilli in Sputum P Uhlenhuth and E Hailer —p 340

Silver Anniversary of Organized Campaign Against Tuberculosis—This number of 184 pages is a special issue in honor of the twenty-fifth anniversary of the organization of the German Zentralkomitee zur Bekampfung der Tuberkulose Helm reviews the work accomplished in this quarter century By 1914 Germany had 158 sanatoriums for adults and thirty-two for children with tuberculosis, 120 institutions for children threatened with tuberculosis, twenty-three for children with bone and joint tuberculosis and 135 daytime sanitariums and 18 schools in the woods The death rate from tuberculosis declined during the twenty-five years from 24 9 per ten thousand to 13 87

The Roentgen Rays and Pulmonary Tuberculosis—Graff took roentgenograms not long before death and made sections of the cadaver in the frontal plane and compared the findings with the roentgenograms This research covering four years and on 100 cadavers enabled the cause of every slightest shadow in the roentgenogram to be located and explained, as also the roentgen findings accompanying different lesions Among the practical conclusions from the work is that localization of lesions by lobes is misleading as the lobes vary in outline and overlap to such an extent The clinical and roentgen findings distinguish between the processes with exudation and those with proliferation of tissue the outlines of the latter being much more distinct With blood-borne disseminated tuberculosis and also inhalation tuberculosis the foci grow smaller peripherad He never found an exception to this rule The bronchogenous processes spread in the same way but more along the front and side walls of the chest This is particularly evident with the exudative type of process This identity of the location of the air borne and of the blood-borne infection shows that the mode of infection does not decide the localization of the process This is determined by functional conditions

Clinical Signs with Various Types of Pulmonary Tuberculosis—Romberg classifies chronic pulmonary tuberculosis as the exudative the proliferative and the cirrhotic types The exudative includes the bronchopneumonic and the pneumonic forms and this requires different treatment from the other types and has a different prognosis, and can be clinically distinguished from them He discusses the local and general reaction and the differential leukocyte count with each type saying that by this means we can trace the evolution of the disease His charts of the leukocyte reaction show high leukocytosis in the second, third and early fourth stages as also displacement to the left, but no lymphocytosis and no eosinophilia after the first two stages

Immunity to Tuberculosis—Neufeld reviews the history of conceptions in regard to this, especially Romer's success in passive transmission of immunity This confirms that the immunity is due to specific reaction products and not to the presence of a tuberculous focus as some assert Romer's work was done on sheep and there seems to be much to sustain the view that the immunity is due to sessile antibodies only a small proportion being found in the blood Neufeld urges further research in this line with homologous serum on animals that we know acquire immunity with relative facility

Conservative Treatment of So-Called Surgical Tuberculosis—Bier relates that he has found heliotherapy by far the most potent means at our command for treatment of tuberculous processes in bones, joints glands, tendons and skin and, possibly of kidneys and testicles but it must be applied properly to be effectual He remarks 'The apparently simple things—to which category sunlight treatment undoubtedly belongs—are the very ones that are usually done wrong He agrees with Finsen that the therapeutic effect is connected with an inflammatory reaction in the disease focus Rollier on the other hand ascribes the efficacy to the pigmentation transforming the short light waves into long waves Bier accepts that the action of the rays on the tissues destroys protein and the action from the protein products is what induces the focal and the general reaction The sunlight rouses the appetite promotes assimilation induces sound sleep in short the effect is like that from transfusion of blood which we know is exclusively a protein body action We must be on our guard not to allow too strong a reaction in either case He adds that he has remained true to stasis hyperemia as a valuable adjuvant in treatment of tuberculous processes A third important measure is internal administration of iodin He gives adults 3 25 gm of sodium iodid daily 'Conservative treatment has proved its efficacy even for the aged Deep cold abscesses subside spontaneously, the superficial are punctured and emptied repeating if necessary but never injecting iodoform or other chemical Large tuberculous sequesters do not call for operative intervention as they are regularly resorbed only rarely are they expelled Extracapsular foci in the bone near a joint heal under conservative measures without danger for the joint The iodin and the stasis hyperemia aid in the resorption of the sequester which can be followed with the roentgen rays Operative measures should of course be considered in cases rebellious to the conservative but it is not always the most advanced and extensive cases that prove refractory The rebellious cases are usually fungous growths in the capsule, hard glands, and nodular lupus

One great argument against surgical treatment is that the focus we have in view is not always the only focus while heliotherapy acts on all at once Bier adds in conclusion that the idea that a tuberculous bone or joint process must be immobilized for it to heal seems almost ineradicable in medical circles In reality, all that is necessary is to relieve it of weight bearing and keep this up for three months after complete healing Laryngeal tuberculosis may also prove amenable to heliotherapy plus stasis hyperemia and iodin internally Complicating pulmonary tuberculosis heals with the rest but the primary is more refractory possibly he adds, because the technic has not yet been perfected (The sanatorium Hohenlychen, where he has accomplished results

that compare favorably with Rollier's in the Swiss mountains, is near Berlin It has only 250 beds, but an arrangement has been made recently for a day-time sanatorium nearer Berlin, with places for 400, the patients going home at night)

Surgical Treatment of Pulmonary Tuberculosis — Sauerbruch and Brunner regard as one of the main advantages of this that persons who are sowing tubercle bacilli broadcast can be rendered harmless for others by surgical measures When this cannot be accomplished with an artificial pneumothorax, they resect from the first to the eleventh rib, close to the spine cutting out under the periosteum from 4 to 8 cm of the ribs at two or more sittings They report 26 per cent with no further expectoration or manifest tubercle bacilli among their fifty-seven patients given this treatment in the last nearly three years, 42 per cent were merely improved No benefit was realized in 25 per cent These figures approximate those in a previous series of 381 cases published, with 35 per cent cured and 40 per cent improved They declare that no patient should be allowed to go year after year scattering bacilli from a rebellious unilateral process when he can be readily transferred to the closed category by this means A climatic course of aftertreatment is advisable, it being distinctly emphasized that this operative measure does not cure but merely provides better conditions for a spontaneous cure

Zentralblatt fur Chirurgie, Leipzig

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Treatment of Osteomyelitic Bone Cavities by the Payr Method A Hedri —p 698
Is Ethyl Chlorid Anesthesia Entirely Innocuous? Hartleib —p 702
Stab Injury of Left Pulmonary Vein A Hofmann —p 704
*Treatment of Prolapse of Rectum in Children Plenz —p 706
Contrast Mediums for Lymphography L Joseph —p 707
Enucleation of a Fist Sized Perithelioma from the Head of the Pancreas F Lolya —p 708
Technic of Albee Operation in Tuberculous Spondylitis J Hass —p 709

Treatment of Prolapse of Rectum in Children — Plenz opposes the opinion advanced by many physicians that in children prolapse of the rectum should be given ample chance to heal spontaneously Children with prolapse of the rectum look forward with dread to every evacuation of the intestine for which reason they endeavor to postpone a movement, and the metabolism and the general condition of the whole organism are very much disturbed by this enforced constipation These facts alone furnish sufficient grounds for operative intervention but when one sees how the children suffer during defecation he thinks that operation becomes imperative in order to relieve them of their suffering He does not approve of Thiersch's wire ring as it nearly always induces suppuration and causes considerable trouble during defecation Other operations are of too radical a nature, and adhesive plaster strapping is unsanitary and often requires treatment extending over many weeks He therefore approves the use of a fascia ring to encircle the anus The advantages of the method are that elastic autogenous material is employed which fits the requirements, the operation is short and not at all dangerous and convalescence extends over ten days at the most Plenz has operated now on thirteen children and with durable success in all He takes a strip of fascia from the thigh, from 12 to 15 cm long by 1 5 cm wide and passes it around the anus in a subcutaneous tunnel burrowed for it The ends are fastened by passing one end through a slit in the other end and then spreading the ends out and suturing the edges to the edge of the strip He makes the two incisions on the raphe in boys and to the side of the anus in girls This answers all the purposes of the wire ring without its drawbacks

Zentralblatt fur Gynakologie, Leipzig

May 21 1921 45, No 20

The Fourth Maneuver (Leopold s Classification) in Obstetric Examination H Fuchs —p 694
Cesarean Section on Account of Fever W Koerting —p 697
*Agenesis of Both Kidneys in Fetus O Hurzeler —p 702
Congenital Aplasia of the Cutis E Graff —p 705
Congenital Atresia of the Ileum E Levy —p 707
Methods of Skin Suture F Opitz —p 709

Agenesia of Both Kidneys in Fetus, with Absence of Amniotic Fluid —Hürzeler reports the case of a child who died twenty minutes after birth, in whom both kidneys were lacking but in place of which bilaterally a formation the size of a hemp-seed was found, resembling a lymph gland As the amniotic fluid was also lacking, the case raises the question whether the fetal kidneys play a part in connection with the origin of the amniotic fluid, as is believed by some

Nederlandsch Tijdschrift v Geneeskunde, Amsterdam

May 7 1921 1, No 19

Shortening of Leg with Hip Joint Disease H Timmer —p 2507
*Inherited Diabetes Insipidus F Janzen and J Broekman —p 2519
Nonmalignant Stenosis of Small Intestine A E Sitsen —p 2532
Shooting at Smugglers L Janknecht —p 2533
History of Medical Service in Dutch East India Company J Haver Droeze —p 2535
Medical Subjects in Art J B F van Gils —p 2561
A Seventeenth Century Medical Journal F D Baumann —p 2563
Tuberculosis Death Rate Before and Since the War B H Sajet —p 2636

Shortening with Hip-Joint Disease —Timmer discusses the estimation of the shortening from the standpoint of the orthopedic surgeon He measures the limb reclining and as the subject stands with books placed under the foot, to bring the pelvis level The measurements differ in abduction and adduction, and the kind and degree of shortening aid in the differential diagnosis

Hereditary Diabetes Insipidus —Janzen and Broekman describe a case and family in which fourteen cases were known in this or preceding generations Their case confirms the peculiar intensity of this hereditary form its regular persistence from birth till death, and the fact that the general health does not seem to suffer In the present case the disease appeared in four of five generations apparently skipping the second In one generation only one of twelve children had it but in another, half of the children In all there were four males and ten females affected but in the seven other families that have been published there were fifty-seven males to twenty-two females In one family diabetes insipidus alternated with diabetes mellitus

Medical Subjects in Art —Jan Steen's works are discussed, and the significance of the chafing dish with flame always occupying a prominent position in his pictures of physicians' visits (V D 1590)

Hygiea, Stockholm

May 16 1921 83, No 9

Factors Predisposing to Tuberculosis H Lundborg —p 289
Care of Mental Disease at Stockholm V Wigert —p 301

Factors Predisposing to Tuberculosis —Among these factors Lundborg ranks admixture of races, universal asthenia substandard constitution, and unusual height the latter especially in mixed races The average height of 1 000 tuberculous men examined in Sweden was 175 cm while the corresponding figure in the nontuberculous was 170 cm

Ugeskrift for Læger, Copenhagen

June 2 1921 83 No 22

*Results of Pneumothorax Treatment S M Saxtorph —p 711
*Registration of Syphilities O Jerild —p 718

Results of Pneumothorax Treatment —This communication from a sanatorium receiving women and almost exclusively those of the wage-earning classes, analyzes the outcome in 200 cases of pulmonary tuberculosis in which attempts were made to induce therapeutic pneumothorax in the ten years ending with 1919 Only 48 of the total are still living An effectual pneumothorax was realized in 108 cases and two years later 47 of these were still living Of the total number 33 per cent are living in good health from two to six years afterward with full earning capacity restored These experiences are regarded as very encouraging to continue the pneumothorax treatment in suitable cases Only 3 are still living of the 34 in whom only partial compression of the lung could be induced The outlook is more favorable in the afebrile cases

Registration of Syphilitics —Summarized in the news columns July 23

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THE SECTION ON DISEASES OF CHILDREN *

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KANSAS CITY, MO

Each year sees an increase in attendance at this section, demonstrating a rapidly growing interest in pediatrics At the general registration any member of the American Medical Association may show his preference for this section by so indicating on the registration card This is simple and democratic It is desirable to have pediatrics brought to the notice of the profession at large, and to draw to our meetings all those who are interested in studying health and disease of children The present plan of registration answers well for the above-mentioned purpose, but it could go farther for those who are devoting themselves to the specialty and who wish to have a more clearly defined active membership and a closer identification with this section As a first step in carrying out this idea it would seem that the value of section membership would be greatly increased if there were available during the session and throughout the year a list of members, who in fact as well as in name belong to the section In the course of a few years, this would grow into a complete roster of those active in pediatrics throughout the United States, as well as of those who are interested but not strictly engaged in the specialty

The advantages of such a roster are obvious, more general information could be disseminated regarding the work of the section, the field of the organization in carrying out nation-wide plans would be widened, a more satisfactory acquaintance with our members throughout the United States would be possible more members of the section would be interested in the *Transactions,* and an active membership could be made to include a regular subscription for this publication Reprints of all papers read would be sent to all registrants of the section Other benefits would undoubtedly accrue As not all the papers read before the section may appear in THE JOURNAL, it would seem wise to make the necessary arrangements for printing in the *Transactions* all the papers approved for publication, and to provide so that authors who wish reprints can secure them

INTEREST IN THE PROGRAMS OF THE SECTION

The secretary and the chairman are authorized to select the essayists and the best material for presentation The choosing of the few for whom there is room on our program has become a difficult matter The officers should have the time and means for becoming acquainted with all the meritorious work that is being done throughout the country Some provision should be made for ascertaining the progress and needs which are peculiar to the various sections of the country and for their presentation before this section Perhaps sufficient variety is not always obtained in subject and personnel from year to year In planning the programs, the subject in previous years should not be repeated unless definite progress is represented There should be rules as to how often a member may present a paper, so as to give an opportunity to all who have something of interest to offer Valuable data regarding programs and section work should be kept in a secretary's book, the property of the section, and handed down from one administration to the next

The officers this year found more good material than it would ever be possible to present in three half-day sessions It seems to the chairman that the papers offered for the section should be sent to the secretary three months before the annual session, to be selected and approved by the executive committee This would permit a selection which would carry out the purpose of the program for the current year, those which are deemed not suitable for reading before this organization would be released, and there could be retained for presentation in succeeding years those acceptable papers in excess of the twenty-one allowed by the Association This would make much easier the planning of the program, and would avoid the embarrassment now felt in the occasional rejection of certain papers after they have been read to the section

We will find a stimulus and interest in the presence of foreign guests at our sessions The visit of Dr Armande de Lille at the Chicago session was much appreciated by those in attendance and added to the fraternal spirit for our colleagues in France In the course of a few years we will add to our better acquaintanceship those representatives who come from the countries across the seas as well as from Canada, Mexico and South America

Many interesting subjects could be handled in the time and place now developing in the scientific exhibit, which should be announced in our program and should be included in our bound *Transactions* Pediatric departments of universities, and public and private clinics have been doing work, the methods and results of which can be demonstrated in this exhibit and made of equal interest to that of the section papers

DEVELOPMENT OF PEDIATRIC RESEARCH

It is true of the younger men in medicine and of many who are teaching that their incomes sometimes prevent them from obtaining sufficient time or resources

* Chairman s address read before the Section on Diseases of Children at the Seventy Second Annual Session of the American Medical Association Boston June 1921

for following special study which would be richly productive A monetary contribution could be made from a fund which would be devoted to this as well as to other purposes needful to our section Such a fund could well be named the "Abraham Jacobi Pediatric Fund" The secretary of the section will need an appropriation to cover the ever increasing expense of his office There are occasions when our section might considerately offer to bear at least a portion of the traveling expenses of a guest, or that of a presentation of pediatric work in the scientific assembly

CREATION OF A PEDIATRIC FUND

Subscriptions to this fund should be voluntary and the individual amount could be placed at five or ten dollars per year until such time as more or less is needed The executive committee or a special committee including the section secretary as a member should act as custodians of the fund Disbursals should be made by the cooperation of the executive and special committees

SUMMARY

It is suggested that the following changes be made in our organization

1 *Membership*—(*a*) Active Those pediatricians who have signed a special application furnished by the secretary of the section are to be registered in an active roster kept by the section and will be contributors to and beneficiaries of a fund for the special purposes of the active organization

(*b*) Attending Those who have indicated in the general registration that they wish to attend and take part in the section meeting

2 *Preparation of Programs*—(*a*) All papers offered for presentation to be in the hands of the secretary three months before the date of the annual session those desirable to be selected by the officers and the executive committee

(*b*) Programs to be planned by elimination of subjects which have been exhaustively presented in former years, a general policy to be outlined for the current year as well as a tentative outline for three years in advance so as to cover the field of pediatrics

(*c*) Invitation of guests to take part in discussions

3 *Creation of a Fund*—(*a*) Establishment of a contributing fund known as the "Abraham Jacobi Pediatric Fund for use by the section in furthering scientific research in meeting expenses occasioned by the assembling of scientific pediatric exhibits of work in aiding worthy individual efforts during the year and for use by the secretary's office for printing mailing of reprints and subscription to the annual *Transactions*

(*b*) A special committee to be created or the executive committee to be authorized to act as custodians and disbursers of this fund, and the secretary's duties to be enlarged to meet the increased functions devolving upon him

Your chairman offers these suggestions for your consideration If you think them practical he will gladly assist as a member of the executive committee in working out the details in conformity with the rules and in consultation with the general officers of the American Medical Association

Development of Science—In the development of all sciences there is a general tendency to substitute for vague generalizations definite and specific inquiry in special fields—Paton

PHYSIOLOGY OF THE BLOOD IN INFANCY AND CHILDHOOD*

WILLIAM PALMER LUCAS, M.D.
SAN FRANCISCO

During the last ten years there have been few subjects in medicine which have received more careful consideration than has the study of the blood Previous to this period most of the studies were confined to a purely morphologic description of the various types of cells, and our original conceptions of most blood conditions were based on these studies Modern methods of biochemistry and physiology have introduced an entirely new conception of the value of blood studies not only in the understanding of anemias, either primary or secondary, but also in the study of many other diseases A true value of the function of the kidneys can be better appreciated through a study of the blood than by a study of the urine In the same way some of the newer methods of analyzing the blood throw light on diseased conditions in other organs, such as the liver and lungs, and on the complicated problems connected with digestion

Barcroft has pointed out that any disturbance which interferes with the oxygen-carrying ability of the red cells must have far reaching results These results, as the loss or diminution of hemoglobin or the interference with its function in any way, are usually grouped among the anemias, but it is not to be assumed that anemias are not also due to interference in the production of red blood cells The carrying of oxygen by the cells depends on a number of different factors, the age of the cells and the condition in which they are extruded from the blood-forming organs These and probably other factors, such as the rate of circulation undoubtedly play a part in the amount of oxygen which the cells are capable of carrying

Means has lately pointed out that the cells also have to do with the transport of carbon dioxid and, though in anemias the ratio of cells to plasma is disturbed the cells still are the main carriers of carbon dioxid, the plasma content of carbon dioxid remaining constant

Hemoglobin may be present in quantitatively sufficient amounts and yet the oxygen be unable to be carried or given off in sufficient amounts to satisfy the needs of the tissue cells throughout the body An example of the inability of the red blood cells to give off oxygen even though hemoglobin is present in normal amounts, is shown in the condition produced by simple cold Another example is the presence of abnormal salt concentrations of the plasma Exactly how these two factors of temperature and general salt contents of the plasma affect affinity of hemoglobin for oxygen is not well known That the amount of oxygen that can be taken up and the rapidity with which oxygen can be given off varies with the temperature of the body is an important factor in temperature regulation in early infancy All of us who have watched new-born infants with disturbed temperature regulation have noted the cyanosis which occurs in these infants with a low body temperature

The fact that hemoglobin is a colloid and the knowledge we have of the interrelation of electrolytes and colloids make it evident that the salt contents of the blood must affect and regulate to a certain extent the

* *Read before the Section on Diseases of Children at the Seventy Second Annual Session of the American Medical Association Boston June 1921*

transfer of oxygen It has been shown that potassium salts are capable of causing hemoglobin to absorb oxygen to some degree Many studies have demonstrated the fact that the loss of water with the resulting concentration of salts affects the oxidation of the body The buffer quality of these salts undoubtedly affects the oxygen transfer from the hemoglobin to the cells of the body This is, as we know, intimately connected with another factor, the hydrogen ion concentration of the blood It is well known that increasing the acidity of the blood lessens its active concentration of oxygen An increased acidity of only one part in each 100,000,000 affects immeasurably the concentration of free carbon dioxid and in this way affects directly the ability of hemoglobin to unite with oxygen The importance, therefore, of studying the relation of hemoglobin to these three factors, temperature, electrolytes and hydrogen ion concentration, is indicated in the study of almost all blood diseases

DESTRUCTION OF RED BLOOD CELLS

The morphologic study of blood furnishes very valuable data as to the condition of the blood-forming organs Normally the blood level is kept up by daily destruction and replacement of cells It has been estimated that from one tenth to one fifteenth of all red blood cells are daily destroyed, as estimated by the daily excretion of this amount of hemoglobin derived pigment However, Ashby has recently determined, by estimating the disappearance of cells transfused by the differential agglutination test, that the normal life of the red blood cell is about thirty days Destruction is continually carried on by the following processes

First, by phagocytosis The endothelial cells in the spleen, liver and other organs take part in the process

Second, by fragmentation This is shown by the occurrence of microcytes and poikilocytes Fragmentation is produced in the circulation and not in the bone marrow Normally there are a few such cells always present in the circulation, but under pathologic conditions, when young cells are thrown out in large numbers, these young cells cannot stand the functional strain put on them and become easily fragmented Under pathologic conditions, not only fragmenting cells but also cells with vacuoles may be found These finally become hemoglobin dust They are removed from the circulation and appear in the spleen Such hemoglobin dust is found in normal spleen, but it is found in much larger quantities in anemic conditions

Third, by hemolysis Under normal conditions this probably plays very little part, as hemolysis is normally an intracellular process, but in pathologic conditions it may play a big part Under such conditions hemoglobinuria occurs, often accompanied by fever and chills

Fourth, the increased fragility of the red blood cells This is especially found in certain pathologic conditions, such as congenital hemolytic icterus, in which there is pronounced blood destruction

REGENERATION

Processes of regeneration are also continually going on Normally, the bone marrow produces only enough red blood cells to maintain the daily loss of red blood cells in the normal wear and tear of life Bone-marrow activity is limited only by its functional capacity This may be hyperstimulated under certain conditions, as by a diminished oxygen supply such as that found in high altitudes, or where there is difficulty in the absorption of oxygen through the lungs, as in congenital cardiac conditions Whether this changes the blood reaction toward the acid side, which in turn stimulates the bone marrow is not clear, and whether the products of red blood cell destruction, that is hemoglobin, stimulates the bone marrow, is not certain With the destruction of the red blood cells there is an increase in the lipoid constituents, or it may be an increase in the complement-like substances, but what part these play in the stimulation has not been decided

Bone-marrow activity is normally a balanced process between blood destruction and blood regeneration Certain tests can be carried out to determine how this balance stands out at a given time First, urobilin estimations in the urine and stools can be used to estimate the presence or the extent of blood destruction Second, by means of vital staining, such cells as the Howell-Jolly bodies, Cabot's ring, and stippling can be made out These may give some idea of the effort which the bone marrow is making in the production of blood and in its effort to maintain the optimum level Third, such an estimate of the effort which the blood-forming organs are making may better be done perhaps by estimating the number of (1) reticulated cells, (2) platelets, and (3) mitochondria, all of which can be determined by special staining methods These are signs of bone-marrow stimulation Normally reticulation exists in from 0 5 to 2 per cent of the red blood cells With marked bone marrow activity this percentage is increased In simple anemia it usually does not go higher than 4 or 5 per cent In hemorrhagic jaundice one finds reticulated cells as high as from 15 to 20 per cent, and after hemorrhage this may be even higher, from 20 to 30 per cent The percentage of reticulation is therefore of great diagnostic value, taken in conjunction with the general condition of the patient As the reticulated cells diminish after hemorrhage, it can be considered as a good prognostic point The estimation of platelets also gives us an idea of the activity of the bone marrow They are increased where there is marked activity and decreased where there is a defective regeneration In diseased conditions where they have been reduced, their return to normal may be a favorable sign

Mitochondria are small lipoid bodies found within the cell protoplasm, which can be demonstrated by some of the newer stains They are not found in adult or fully formed red blood cells, but are found in nucleated red or immature red blood cells, therefore their presence and estimation give us some idea of the number of the immature cells in circulation

It has been shown that oxygen consumption may be proportional to the percentage of reticulated cells Normally, human red cells consume very little oxygen In anemia the consumption of oxygen by the red blood cells may be marked, and this depends on the presence of young cells, not that of the full grown erythroblasts The demonstration of an increased oxygen *absorption* by accurate methods may prove a more quantitative index of functional variations in bone-marrow activity than the microscopic evidence taken alone

It has been pointed out that there is a certain diurnal change in the amount of hemoglobin in circulation

which normally is about 10 per cent., but under pathologic conditions may be as high as 30 per cent. The highest hemoglobin estimations are between 9 and 10 in the morning, and the lowest between 6 and 7 in the evening. These variations must be considered in connection with the change that is taking place in the blood and circulation, in the pulse rate and rate and volume of absorption and possibly with the fluid absorption or kidney excretion.

In any study of the regeneration of hemoglobin and red blood cells it is important that the determination of hemoglobin percentage be as accurate as possible. Various investigations with the ordinary methods of testing hemoglobin have shown that they give an error of from 5 to 20 per cent. The newer methods of estimating hemoglobin are based on the oxygen capacity of the red blood cells. Various methods for estimating the oxygen capacity have been worked out by van Slyke and Hoppe-Seyler, and lately Palmer has published a method which is the most accurate one we have for determining hemoglobin percentage and oxygen capacity of the hemoglobin. Robscheit has modified this somewhat and determines the hemoglobin in the form of acid hematin. Some such method as that of Palmer or Robscheit should be adopted for all clinical purposes. For the determination of the hemoglobin as accurate estimates are much to be desired in the study of blood regeneration and destruction.

PIGMENT METABOLISM

The study of hemoglobin pigment metabolism is also important. The liver has not only an eliminative function in forming bile pigment from the freed hemoglobin of broken down red blood cells but as shown by Whipple, it has a constructive function also. The bile pigment is excreted into the intestines, reduced to urobilin or stercobilin, some of this is reabsorbed to be again thrown out or destroyed or it may escape into the circulation and appear in the urine. Whipple has shown that the liver can construct bile pigment probably from its endothelial-cell activity and under certain conditions there may be extrahepatic bile pigment production. Furthermore these experiments have demonstrated that diet definitely affects the amount of pigment function or output being increased on a carbohydrate diet and decreased on a meat diet. In other words the liver endothelial cells can build up pigment and the urobilin complex postulated by Addis in the bile circulation theory, may not be the only way that hemoglobin is built up. The liver has some constructive function in hemoglobin regeneration and it can be modified by diet as can bile pigment regeneration. The liver can construct hemoglobin out of other material than broken down red blood cells. Undoubtedly the pyrrol complex is a peculiar feature of the hemoglobin molecule. The production rate of hemoglobin can be affected by diet. Not only elements of protein catabolism but also certain factors in the diet contribute to the steady construction of hemoglobin regeneration. Liver-cell activity has to do with hemoglobin or blood-pigment metabolism. On the functional activity and integrity of the liver cells not only depends the level of bile pigment and hemoglobin production in the body, but it has to do with the maintenance of a normal level of plasma and serum proteins. Liver function in this respect is influenced not only by tissue catabolism but also by diet. As has been stated, the rate of hemoglobin destruction may be estimated by estimating the urobilin in the stools and urine. In the urine it may be increased when there is no marked destruction of hemoglobin or red blood cells, but it may indicate a poorly functioning liver where the urobilin is not removed from the blood and appears in the urine. This may be tested by some of the newer methods of estimating the urobilin in the blood serum. It gives an estimate of liver function.

In the diagnosis of various types of liver disturbance either before urobilin appears in the urine or before there is icterus, it must be present for some time in the blood serum, and in amounts that are often below the level of kidney appearance or icterus. For the reason that urobilin may occur in the urine in conditions other than those associated with excessive blood destruction, stool and urine and blood serum determination of urobilin must be made. The hepatic origin of urobilin under certain conditions must be borne in mind. In any case the figures for urobilin in urine and stool should be compared with the normal standard.

Lately another method for estimating blood destruction has been suggested by the injection of sterile hemoglobin solution. The tolerance or lack of tolerance is shown by the appearance of hemoglobinurea in cases showing evidence of blood destruction. The test may be of quantitative value, as the amount of hemoglobin needed to induce hemoglobinuria is directly proportional to the degree of blood destruction and the tolerance of hemoglobin may be shown to be low in conditions which are usually accompanied by increased elimination of urobilin.

FUNCTION OF THE SPLEEN

The function of the spleen in regard to regeneration and destruction of blood has been under much discussion. The facts regarding the position of the spleen in regeneration are as follows. It is known that during fetal life the spleen has the function of forming red blood cells and that under pathologic conditions the spleen may take on this function especially in the production of myeloid cells. There has been much discussion as to whether the removal of the spleen in certain blood conditions is of value because it affects blood destruction or because it affects the formation of blood. Usually there is an anemia following splenectomy. This may be due to a diminished activity of the blood-forming organs. This is borne out by the fact that after splenectomy there is less rapid blood regeneration in the splenectomized animal. The spleen probably affects the activity of the bone marrow, normally exerting a stimulating effect. It has been shown that after splenectomy the bone marrow increases to take over the function of storing and elaborating the iron of the old blood pigment. There are certain facts, however, which point to the spleen as taking part in blood destruction. After splenectomy, red blood cells show increased resistance to various lytic agents, hypotonic salt solution and the mechanical effects of shaking. The spleen probably has to do with the normal destruction of worn-out red blood cells. However, it must be remembered that the removal of a normal and of a pathologic spleen may differ in what they demonstrate. In a pathologic spleen the removal may cause hemolysis and depress bone-marrow function whereas splenectomy of a normal spleen causes anemia by taking away the normal stimulus to blood formation. Furthermore it must be remembered that the spleen is only one organ among many which have to do with blood formation,

and also that these organs, the liver, lymph nodes, bone marrow and spleen, all have interrelations which are important

DESTRUCTION OF LEUKOCYTES AND LYMPHOCYTES

Degenerative processes of the leukocytes are much harder to determine what becomes of them is not yet clear If one follows cases in which there has been marked leukocytosis, often signs of nuclear changes, granulation, vacuolation, fragmentation and fragility, and changes in the protoplasm, will be seen A result of leukocytic breakdown is found in an increased uric acid content of the urine, as can be shown in leukemia when there is a sudden drop in the leukocytic count

There is still less evidence of what becomes of the lymphocytes We know that certain substances, such as benzine, radium, and roentgen ray, cause a destruction of lymphocytes as well as leukocytes, but, even where they diminish rapidly in the blood following treatment by this means, it is hard to recognize how they disappear or disintegrate

COAGULATION

Coagulation may be defined as the colloidal change which occurs under the influence of calcium electrolytes, during which the blood is transformed from the fluid state into the solidified state, which we recognize as coagulated blood The changes which take place during this process are now more clearly understood because the various factors which enter into them have been made capable of separate analysis Coagulation of normal blood may be divided into three stages Of the first stage very little is known except that certain definite changes take place during a very short period of time The second stage, which is the formation of thrombin, depends on the reaction between two substances, cytozyme and serozyme, the one obtained from the cellular elements, and the other from the plasma, acting in the presence of calcium salts to form thrombin, which, in turn, during the third stage, combines with fibrinogen to form the fibrin clot It can now be clearly demonstrated that the factor fibrinogen is disturbed in conditions primarily affecting the liver Calcium itself is rarely affected except in those cases in which there is a sufficient quantity of bile salts in circulation to combine with the calcium salts, thus rendering them unavailable for combination with the serozyme and cytozyme

The factor concerning which we know the most is that derived from the cells, particularly the platelets There are two main conditions in which there is marked disturbance of this factor In purpura hemorrhagica there is a deficiency in the number of platelets When the platelet count falls below 100,000 we are in the danger limit, when it falls below 20,000, hemorrhage from lack of platelets will occur In hemophilia, and in the ordinary case of hemorrhage of the new-born, there is a qualitative change in the platelets or their product, prothrombin The total number of platelets may not be diminished, though qualitatively they may be so changed that hemorrhage may occur at any time In hemorrhage of the new-born this is a temporary condition, which usually passes away within a very short time We have been able to show from experimental work on the blood of the new-born that there is, during the first few days of life, a definite qualitative defect or, perhaps better, a lack of equilibrium in the prothrombin elements In hemophilia, the condition is hereditary and constantly present, whether there is bleeding or not There are certain other types of hemorrhage of the new-born, such as that which occurs during acute septic infection of the new-born, in which the antithrombin, which Howell has demonstrated, is the main factor at fault, and there are certain other cases of liver injury, as demonstrated by Whipple, in which the fibrinogen is at fault, but the usual cases of hemorrhage of the new-born, and certainly those which respond to blood transfusions, are those in which the prothrombin element is affected Just what is the underlying cause of this lack of balance in the prothrombin element in the new-born has not yet been demonstrated

The fact that the life of the blood platelet is approximately only four days, which is a very much shorter period than that of the other cellular elements of the blood, explains the reason why the value of transfusion in hemophiliac conditions is so short-lived As soon as the transfused platelets disappear, the primary condition returns Some permanent effect on the prothrombin element has been obtained by feeding cephalin or *thromboplastic substances to hemophiliacs This line of* treatment we feel offers the best permanent results in the treatment of true hemophiliac conditions, whereas direct transfusion in the temporary disturbance of prothrombin in the new-born successfully cures this condition, as the prothrombin factor reaches its normal level probably by the end of the first week This explains very clearly the success which transfusions have given in these cases of hemorrhage of the newborn

THE TIME ELEMENT

It is important to determine the coagulation time by proper methods The ordinary methods of determining coagulation time by obtaining the blood from puncture wounds is open to grave objections Unless the blood is derived directly from the vein, tissue juices are mixed with the blood, and so definitely affect the coagulation time that a true picture is not obtained If the blood is drawn from a vein under proper conditions and tested, the normal coagulation time averages from six to twelve minutes, anything over twenty minutes can be taken as meaning definitely delayed coagulation

If at the same time the sample of blood is oxalated, its recalcifying time will give an accurate picture of the prothrombin element These two tests, coagulation time and prothrombin or recalcifying time, should be tested in all hemorrhagic cases A further simple test is that of bleeding time, which is estimated by making a fresh cut in the finger or the lobe of the ear so that the blood flows drop by drop The blood is taken up on absorbent paper at intervals of thirty seconds In this way, each drop will give the amount of blood shed in the given interval The total duration from such a bleeding point will be the bleeding time Normally, bleeding time varies from one to three minutes and is independent of the coagulation time For example, in purpura hemorrhagica the coagulation time is usually normal but the bleeding time markedly prolonged, whereas in hemophiliac conditions *the bleeding time* may be normal but the coagulation time is markedly prolonged

As has been stated, fibrinogen, calcium and antithrombin are much less often affected unless there is liver derangement or destruction Calcium is rarely diminished in quantity, and the giving of calcium, there-

fore, except in cases of marked jaundice, does not in any way affect coagulation These studies have clearly demonstrated why so few results have been obtained from the administration of calcium, even in large quantities, in the ordinary hemorrhagic conditions

THE CHEMICAL METHOD OF STUDY

At the present time, there is a great deal of work being done in studying the blood by the chemical methods The impetus to this work rests on the introduction by Folin of the microchemical methods of studying small samples of blood, and almost every week new methods of study are being brought out I shall not attempt to describe any of the various methods, but I shall describe some of the results of these studies and their application to a better understanding of disease, which should be considered if we are to understand the blood as a tissue that is capable of very intensive investigation, and which will lead materially to a better comprehension of normal and diseased conditions, not only those connected with the blood itself or blood diseases but also disease as it affects other organs

VARIATIONS IN BLOOD PROTEINS

Most of these studies have been carried on in relation to kidney conditions and to diabetes It is of interest to note that, in certain nutritional conditions the blood proteins vary materially Whereas, normally the blood proteins vary from 7 to 8 per cent in the normal adult, this level during the first year is from 6 to 6 5 per cent In cases of malnutrition it may be reduced to between 4 and 5 per cent The same may be true of the blood protein of premature infants whereas in diarrheal conditions during infancy the blood proteins may rise to 8 or 9 per cent

Whipple, in his studies on blood serum protein regeneration under certain conditions of depletion and intoxication, has found that, where the serum protein is depleted to 1 per cent, this appears to be the absolute minimum below which the body cells cannot survive When 2 per cent is reached this is found to be a dangerous level of depletion These experimental findings of Whipple agree very closely with those of Utheim in infants suffering from athrepsia or malnutrition It is important, therefore, in these cases of malnutrition to estimate the amount of blood proteins present and, as Whipple has pointed out, there is marked similarity between the parenchymatous regeneration and blood serum protein regeneration Whipple suggests that it may very well be that the protein for the parenchyma cells or the protein for the blood plasma may require similar construction periods and building material and it may be that the blood protein construction depends on the activity of the cell protein This regeneration period in chloroform poisoning, in which the liver is injured takes from seven to ten days These studies are very suggestive and throw considerable light on both the prognosis of nutritional conditions and the progress of the condition, if the proteins can be followed for their regeneration or lack of regeneration And Utheim has pointed out that, in some of these nutritional conditions in which the blood proteins are reduced to the danger limit, repeated transfusions of comparatively small amounts of blood will often assist in tiding over very critical nutritional periods by raising artificially the blood protein level, thus giving an opportunity for the body cell metabolism to function from a better metabolic basis

IMPORTANCE OF STUDYING BLOOD SUGAR

The importance of studying blood sugar has been clearly demonstrated in the study of diabetes, and it is well recognized today that the excretion of sugar by the kidneys is a sort of safety valve factor of the body The real condition which needs careful attention is the hyperglycemia The importance of this is shown in that, as diabetes advances, glycosuria becomes a less and less safe criterion of the stage of the disease, since the permeability of the kidneys for sugar is greatly lowered, especially as nephritic symptoms appear, and the blood sugar is a far better criterion of how the condition is progressing Of further importance in the study of diabetes from a prognostic as well as from a therapeutic standpoint is the hydrogen ion concentration of the blood This is especially true as an index of present or approaching acidosis, for the blood sugar and alkali reserve in the body are important as determining factors, and as indicating how the disease is progressing

THE CARBON DIOXID CONTENT

The carbon dioxid content in the blood is composed of two parts that in simple solution (or as carbonic acid, H_2CO_3), and that chemically combined as bicarbonate, ($NaHCO_3$) The amount in solution depends entirely on the tension of carbon dioxid to which the blood has been exposed and can be calculated directly from this solubility coefficient of the chemically combined carbon dioxid existing as bicarbonate Hemoglobin plays a large part in the equilibrium of carbon dioxid, and in the acid-alkali equilibrium In cases of severe anemia, it has been shown that the respiratory center is controlled by the reaction of the tissue fluids in the respiratory center This is dependent on the carbon dioxid tension, and this tension in the tissues must exceed that of the arterial blood and must be higher than in the venous blood In anemia the carbon dioxid carried from the tissues for each change in tissue tension, is less than normal as has been pointed out by Peters, and unless the blood flow is increased this will result in an accumulation of the carbon dioxid within the tissues With each increase in carbon dioxid tension, the hydrogen ion concentration rises relatively rapidly In severe anemia, there is a tendency to accumulation of carbon dioxid in the tissues a diminished ability of the blood to lose carbon dioxid in the lungs, and relatively rapid change in the hydrogen ion concentration with any change in the carbon dioxid tension

All these factors tend to excite the respiratory center and produce dyspnea This is in particular, caused by the low hemoglobin, and therefore changes in the carbon dioxid tension produce considerable change in the hydrogen ion concentration

PHYSICOCHEMICAL EQUILIBRIUM

Henderson has pointed out that there are six variables involved in a single physicochemical equilibrium, and that a knowledge of any two of these will give an estimate of the acid-base equilibrium of the blood It has been pointed out by Means and his co-workers that acidosis may be compensated or decompensated, and it is important to determine which of these two states exists This is valuable not only from a prognostic standpoint, but also from the standpoint of treatment, for in a compensated acidosis, though the alkali of the blood may be diminished on account of an increase of the nonvolatile acids in the blood it may have a normal

reaction and the acidosis be compensated In such a case, alkali therapy may not be indicated and at times may do more harm than good, whereas, in a decompensated acidosis, alkali is necessary to change the reaction of the blood In such cases, however, the equilibrium may be pushed too far to the alkali side, and alkalosis occur unless care is taken We may have either a condition of acidosis compensated or acidosis decompensated, or the opposite may occur, a compensated or decompensated alkalosis Furthermore, Means has pointed out that in certain conditions, such as pneumonia, the buffer of the blood may be normal but the reaction more acid than normal, owing to a carbonic acidosis In such a case, the condition is probably due to the fact that the pulmonary ventilation is insufficient to preserve the normal ratio between the soluble carbon dioxid or bicarbonates, and the blood is not getting enough carbon dioxid out It is important, therefore, not only to estimate the reaction of the blood but also to estimate the available alkali, and it is the estimation of these factors that establishes the compensated or decompensated acid-base equilibrium

PHENOMENA OF ACID INTOXICATION

Since the introduction of simple methods for estimating the carbon dioxid combining power of the blood, much light has been thrown on the phenomena of acid intoxication Acidosis may result either from the overproduction of acid bodies or by their decreased elimination The normal slightly alkaline reaction of the blood is maintained by the influence of the bicarbonates, phosphates and proteins of the blood The carbonates may be considered as a first line of defense During acidosis other acids combine with the carbonates and lower the body's alkaline reserve Under normal conditions, the kidneys are able to secrete an acid urine from nearly neutral blood through the medium of acid phosphates, which may be considered as the second line of defense, and it is this line of defense, the acid phosphates, which breaks down in the acidosis of nephritis, with an increase in the nonvolatile acids and a diminished available supply of alkali Testing the amount of acetone and diacetic acid in the urine does not give very much indication as to the severity of an acidosis The estimation of the carbon dioxid combining power of the blood gives this information much more accurately This is especially true in following the treatment of diabetes by the Allen method In severe nephritis, the retention of nitrogen and of acetone often accompany each other, and this type of acidosis is more easily corrected by alkaline treatment than the acidosis of diabetes, in which fasting will often check the acetone body formation, and so affect the acidosis much more readily than it is affected by giving alkali

The acidosis found associated with severe diarrhea of infancy is not due to the presence of acetone bodies but rather to the deficient excretion of acid phosphates by the kidneys In such cases administration of sodium bicarbonate will often correct the characteristic symptoms and give normal blood tests for alkali reserve Notwithstanding this, the child may die Undoubtedly in such cases the nutritional metabolism of the cells themselves has been disturbed, and simply correcting the blood alkalinity is not sufficient to restore the cellular equilibrium The importance of these blood studies is that, by repeated blood tests, we are able to arrive at a more accurate knowledge of the internal metabolism early enough to correct it, whereas, if we wait until definite symptoms appear, even the most approved treatment will not check the process sufficiently to save the patient

In nephritis the study of the nonprotein nitrogen in the blood becomes important, giving a better indication of kidney function than almost any other of our functional tests, from both the prognostic and the therapeutic standpoint This statement is perhaps more correct for chronic nephritis than for acute nephritis

In acute conditions, elimination of salts is, as we have learned, just as important The retention of chlorids resulting from conditions of lowered permeability of the kidneys and the retention of phosphates in the blood have a great deal to do with the production of acidosis Where the phosphates are greatly increased, the calcium content is greatly decreased and acidosis may result In parenchymatous nephritis, the retention of salts is greater than that of the nonprotein nitrogen elements The nonprotein nitrogen composition of the blood, although is constitutes only 1 per cent of the total nitrogen of the blood, is more important because the nonprotein nitrogen factors show both the anabolic and catabolic processes more than the protein nitrogen, or at least they give us a better insight into what is going on, and variations from the normal in the nonprotein elements often aid us in appreciating what is really happening It has been shown by many studies that the various constituents of nonprotein nitrogen have different origins Urea is largely endogenous, while uric acid is partly endogenous and partly exogenous under normal conditions of diet and health, and creatinin is almost entirely endogenous Urea is produced mainly by the liver as a result of the deaminization of amino acids produced during digestion which are not used immediately by the blood Uric acid, on the other hand, is the result of enzymatic transformation of the aminopurins and oxypurins Creatinin is supposed to be formed in the muscle from creatin

The distribution of these nonprotein nitrogen constituents varies greatly in the blood and urine The percentage of uric acid in normal blood is greater than in urine, while the urea is much lower In the case of creatinin and ammonia, it is very much lower The kidneys remove creatinin and ammonia with great ease, whereas it is not so easy to remove uric acid This explains why, in any altered function of the kidneys, the blood first shows a retention of uric acid, then urea, and lastly creatinin

UREA OF BLOOD AND OF URINE

In diseased conditions of the kidneys, the normal level of urea and nonprotein nitrogen in the blood is usually first affected The relationship between urea in the blood and the output in the urine should always be considered, especially in the study of kidney function The important thing is the ratio between the urea content of the urine and that of the blood One may have a high blood urea level with a high urinary output, and still have a fairly good functioning kidney, at least when it is able to cope with this situation, whereas, if the blood urea is high, and the urinary output low, it shows a very much more marked deficiency in kidney function Addis has devised a urea function test that aims at an estimation of the functional capacity of the kidneys, and this after all is the most important evidence needed from the standpoint both of prognosis and of treatment Urea retention occurs under a great

many different conditions besides nephritis, as in cardiac conditions, in syphilis, in lead poisoning, and in many of the anemias

CONCENTRATION OF THE BLOOD

Certain conditions which raise the concentration of the blood, as vomiting, diarrhea, profuse sweating or polyuria, may cause an increase in the red blood cells These conditions produce a water loss in the blood, so that the hematocrit reading (the reading in an accurately calibrated centrifuge tube after centrifuging) would show a marked reduction in the normal plasma and an increase in the cell content We have seen the cell content as high as 80 per cent (normal cells from 46 to 48, plasma from 52 to 54 per cent), and the plasma content as low as 20 per cent in cases of acute diarrhea It is therefore important, in interpreting the number of red cells, to consider the change in blood volume and water content of the body The water content of the body in children is especially affected by two factors, age and feeding We have shown a definite curve in the blood volume in newborn infants and in infants during the first year of life The effect of food on the water content, and therefore, the concentration of the blood, has been shown to have a definite relationship to the amount of carbohydrate food given With high carbohydrate food, there is definite retention of water in the tissues It has been shown that glycogen, when it is stored in the body, takes with it three times its weight in water so that children on a high carbohydrate diet would tend to have a diminished blood volume

RATE OF CIRCULATION

In nutritional conditions with marked anemia, the rate of circulation in the venous and capillary blood is important It has been shown that there is a marked increase in the red cells and the hemoglobin content in the capillaries in cases of marked malnutrition, and that this is due to the peripheral constriction of the blood vessels, which is not found in normal infants or in those suffering from other conditions, except an acute diarrhea In both diarrhea and athrepsia or malnutrition the blood flow is markedly decreased In cases of malnutrition, however the hematocrit readings are reversed as compared with the cases of diarrhea, the plasma being increased and the red blood cell percentage decreased In the anemias, often the blood flow is markedly increased In all these conditions, besides the viscosity of the blood and the total blood volume, other factors must be considered in estimating the rate of blood flow, such as the condition of the heart, and the influence of the vasomotor system In cases of acute diarrhea, starvation, athrepsia or malnutrition, as soon as food or fluid are given, the blood volume will be rapidly restored as well as the blood flow increased The importance of the water quotient has thus been definitely determined by a careful study of these blood factors, and these studies have undoubtedly had more effect in lowering the mortality of these nutritional conditions in infants than any other studies that have been carried on during the last few years

THE BLOOD VOLUME

The volume as well as the concentration of the blood, plays an important role in the pathologic physiology of the blood The normal values for plasma and blood volume are best expressed in percentages or fractions of the body weight, or as the number of cubic centimeters per kilogram of body weight The best method for estimating the blood volume is the vital dye method As the dye is not taken up by any of the red blood cells or tissues, but remains for a comparatively long time in the plasma, it can be easily and accurately determined by colorimetric methods In pathologic conditions, the changes from the normal blood volume are quite striking For example, the blood volume following severe diarrhea is markedly decreased, and in these cases the hematocrit readings show a very marked relative increase in the red blood cells and a diminution in the plasma volume In the chronic intestinal and nutritional conditions, such as athrepsia or malnutrition, the blood volume in these cases is relatively increased, whereas the red blood cell volume is decreased In anemias, even where the total blood volume is not markedly lowered, there is a change in the comparative percentage of plasma and cells, as there is a relative increase in the plasma and a diminution in the red blood cell percentage In both chronic nutritional conditions and anemias, the plasma may be as high as 80 per cent of the total hematocrit reading Boch has pointed out, however, that plasma tends to be constant, so that the variation in these pathologic conditions is one mainly of the red blood cells Where the reduction of the blood volume is as low as 20 per cent, as has been shown by Robertson and Boch, there is definite indication for transfusion, because a lower limit is incompatible with life These studies in blood volume have shown the importance of transfusion

CONCLUSION

In this rather hasty and cursory discussion of some of the modern lines of investigation of blood, I have simply tried to indicate the various lines along which these problems can be attacked, and have pointed out some of the achievements which have resulted from these studies We can confidentially expect that our knowledge of these problems will be much clarified by the continuation of these investigations

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ABSTRACT OF DISCUSSION

DR HERMANN M APPEL, New York In testing for hemolysis of the red blood cells, is urobilin obtained by duodenal intubation? In that way we get the first output of urobilin before it gets into the blood or into the urine, and it can definitely be established in that fashion

DR FRANK C NEFF, Kansas City, Mo Dr Lucas made an interesting observation about the cause of cyanosis in young children with high infectious states and in febrile states

DR WILLIAM PALMER LUCAS San Francisco We have devised a test for estimating the bilirubin in the blood plasma which gives the percentage ratio of bilirubin We find that it appears earlier in the serum before any sign of icterus appears I have some tubes here too small to pass around which show the gradation in the new-born We have found very definitely that in the new-born it appears in the serum first And then it depends on the function of the liver whether it is thrown out into the intestinal tract or not We have been unable to find urobilin in the stools of the new-born during the first ten days, whereas during that period icterus neonatorum appears quite frequently We feel that the amount of bilirubin can be estimated more accurately in the plasma and its appearance and disappearance can be noted more clearly The same thing occurs in hemolytic jaundice About the cyanotic state—that was in cases of lowered temperature and not of elevated temperature That is a different problem

CHOLECYSTOGASTROSTOMY AND THE COURVOISIER GALLBLADDER*

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The clinical picture of chronic obstructive jaundice is so well recognized that it calls forth little comment. However, the rapid loss of weight, the emaciation and asthenia, the pruritus and disturbing mental depression, associated with cholemia, very often render imperative attempts at operative relief.

In a paper published in August 1916,[1] entitled "Relief of Chronic Obstructive Jaundice by Palliative Operations," an argument was advanced for a more extended employment of cholecystogastrostomy. In the succeeding years, we have given this operation a far wider application and have utilized it in more varying pathologic conditions. Neoplasms or irremovable tumors involving the distal half of the biliary ductal system are the most frequent indications for diverting the bile current. There are, however, other lesser indications which may call for surgical intervention. These may be summarized, thus: (1) Mistaken diagnosis. Not infrequently a surgeon operates for supposed malignancy and finds the diagnosis has been incorrect, and by the institution of drainage, the inflammatory condition subsides with recovery of the patient. It is only upon such premises that the occasional "cures" of supposed cancer can be reasonably explained. "No one living is infallible in the differential diagnosis of obstructive jaundice. The diagnosis is always so difficult and the chance of a life saved is so important that however positive the evidence of malignancy may be I now advise operation in all cases."[2] (2) The relief of distention pain. All patients do not have pruritus or the mental depression of cholemia, but they suffer a gradually increasing pain from distention of the biliary apparatus. (3) Intractable pruritus in many cases so severe that the patients positively demand relief. (4) Social: to prolong life in comparative comfort until such time as death takes place from metastasis or local extension of the growth. (5) As a preliminary measure in chronic jaundice when the origin of the obstruction is doubtful and when the condition of the patient with cholemia, asthenia and hemorrhagic tendency is such as to prohibit thorough exploration. (6) As a palliative operation in the aged and infirm. One has only to recall a patient on whom an emergency cholecystostomy has been performed with the idea of a more thorough surgical exploration later. Quite contrary to expectations, the second operation is attended with more danger than the first by reason of the great loss of bile that has taken place in the interim. It would seem that the patient's strength would have been more adequately conserved by a cholecystogastrostomy with internal drainage of bile into the gastroduodenal segment. (7) In certain patients with recurrent cholecystitis and cholangeitis, incompletely cured by cholecystostomy and in whom the closure of the sinus brings about an attack of jaundice and ascending biliary infection. Closely associated with this condition is an ill-defined group of cases with biliary cirrhosis sequential to chronic cholangeitis in whom cholecystogastrostomy affords a remedial measure of undoubted value. (8) Cholecystogastrostomy is possibly indicated as a therapeutic measure in the treatment of certain types of ulcer of the stomach.[3]

FUNCTIONAL SIGNIFICANCE OF BILE

Our knowledge of the functional significance of the bile is by no means a closed chapter. Although the bile does not possess any direct power as an enzyme, it has, nevertheless, a zymosthenic or activating influence[4] in that it increases the activity of the ferments of the pancreatic juice and activates the lactase of the intestinal secretion, and has a strong stimulating influence in the formation of invertin. It augments the lypolytic power of the pancreatic juice and favors saponification and thus aids materially in the absorption of fat. Protein by-products form insoluble compounds in an acid medium, but are redissolved in an excess of bile. Although bile has no antiseptic power, per se it aids in preventing intestinal putrefaction by favoring the development of the less active organisms and by modifying the activities of such bacteria as are present. In addition, bile probably has an antitoxic function by neutralizing certain poisons arising from intestinal putrefaction.[5] Mucin is coagulated by mucinase derived from the cells lining the intestines. Bile inhibits the action of mucinase with the result that the mucin in the upper portion of the intestinal tract is in a fluid state and undergoes coagulation only lower down in the large intestine. In normal feces, the saponified and unsaponified fats are approximately equal in amount. The pancreatic juice brings about the proper degree of fat splitting that must precede saponification so that if the excess of fat is due to a pancreatic defect, unsaponified fat will be in excess of the saponified. On the other hand, the absorption of fat is dependent on the bile salts acting on the fats already digested by the pancreatic juice. Accordingly if there is loss of bile, saponified fats will be in excess because they cannot be adequately absorbed. It is due to this difficulty in the absorption of fat that chronic jaundice is so uniformly associated with wasting.[6] The emaciation and loss of weight are not indicative of carcinoma, as both may be present in chronic pancreatitis with obstructive jaundice.

The bile salts that enter the bowel are reabsorbed and used over again several times. Soon after a cholecystostomy has been established, the salts in the bile fall to one tenth of the normal since reabsorption cannot occur. The loss of bile externally by prolonged cholecystostomy means an exhaustion of bile salts due to the inability of reabsorption and a progressively diminishing hepatic function of the liver.

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* From the Surgical Department of New York Post-Graduate Hospital, Dr. John F. Erdmann, Director. The material and cases on which this paper is based are from the collective surgical service of the department.

1 Erdmann, J. F., and Heyd, C. G.: Relief of Chronic Obstructive Jaundice by Palliative Operations, Am. J. M. Sc. **152**: 174 (Aug.) 1916.

2 Moynihan, B. G. A.: Abdominal Operations, Philadelphia, W. B. Saunders Company, **2**: 437, 1914.

3 Babcock, W. W.: The Control of Hyperchlorhydria and Its Consequences by Cholecystogastrostomy, Med. Rec. **98**: 476 (Sept. 18) 1920. Cholecystogastrostomy and Cholecystoduodenostomy, Am. J. Obst. & Gynec. **1**: 854 (May) 1921.

4 Roger, H.: Universal M. Rec. **3**: 289 (April) 1913. Roger, H.: Presse med. **20**: 801 (Oct. 2) 1912.

6 Brown, W. L.: A Clinical Lecture on Jaundice, Med. Press & Circ. **94**: 482 (Nov. 6) 1912.

PANCREATIC CARCINOMA AND COURVOISIER GALLBLADDER

Pancreatic or ampullar carcinoma is the most rapidly fatal of any form of neoplasm Death ensues within from seven to eight months from the time of onset of noticeable symptoms, and occurs usually before the growth metastasizes or obtains any great local extension There is no place, with the possible exception of the central nervous system, where a neoplasm, while yet small, induces so much widespread symptomatology as at the lower end of the common duct The clinical differentiation between cancer and chronic pancreatitis is always difficult and sometimes, even with intra-abdominal exploration, it may be impossible to distinguish between these two conditions, particularly if the pancreatitis is nodular They are both associated with chronic obstruction of the common duct, and the persistent jaundice and distended Courvoisier gallbladder give a similar pathologic picture Bevan [7] states that he has had "twenty or more of these cases, many of which were considered malignant at exploratory operation but had made complete recoveries"

Stone in the common duct is usually the result of a previous infection of the gallbladder and predicates a chronic cholecystitis with cicatrization and contracture Courvoisier,[8] reporting 187 cases of obstruction of the common duct, found that in 100, obstruction was due to causes other than stone and in eighty-seven the obstruction was due to calculous impaction Of the 100 cases in which obstruction was due to causes other than stone, in ninety-two there was a dilatation or distention of the gallbladder and in eight cases there was a normal gallbladder or an atrophy of the gallbladder Of the eighty-seven cases in which obstruction was due to stone, in seventy cases the gallbladder was atrophied and in seventeen cases the gallbladder was dilated The deduction was made by Courvoisier that in cases of chronic jaundice due to obstruction of the common duct a contraction of the gallbladder signifies that the obstruction is due to stone a dilatation of the gallbladder that the obstruction is due to causes other than stone Cabot,[9] reporting the cases of the Massachusetts General Hospital, found eighty-six with obstruction of the common duct With the exception of four cases, which constituted only 5 per cent of the total number examined, every record in which definite statements are to be found confirms Courvoisier's law

The exceptions to Courvoisier's law are few (1) stone in the cystic duct with hydrops or empyema and with stone in the common duct, (2) acute cholecystitis, with obstruction of the cystic duct and with a stone in the common duct, (3) chronic pancreatitis with stone in the common duct, (4) stone in the cystic duct with compression of the common hepatic duct, and (5) malignant disease along the course of the common duct, with an old chronic fibroid gallbladder

It is usual to find the Courvoisier gallbladder distended with bile This is not always the case, as a distinct hydrops and a well dilated common duct filled with clear mucoid fluid have been observed This condition is associated with patulous cystic and hepatic ducts and is essentially a pressure acholia In one of our cases with steadily increasing jaundice, the gallbladder and common duct were found at operation to be enormously distended with clear fluid A cholecystostomy was performed, and for a few hours clear fluid flowed from the tube After the mucoid material drained away, bile was obtained in large amounts Later necropsy revealed a small carcinoma at the ampulla of Vater Kausch [10] thinks that the hydrops in these cases is due to excessive secretion by the mucosa of the gallbladder and ducts, and, with the duodenal opening occluded, the pressure in the ductal system is so raised that the bile is forced into the blood and lymph vessels of the liver

OPERATIVE PROCEDURES

Operations for carcinomatous jaundice will be palliative procedures to provide drainage for the biliary secretion The simplest technic for this purpose is external drainage by means of cholecystostomy Such an operation, however, entails a rapid loss of bile salts and body fluid and should not be the procedure of choice The union of the gallbladder to various portions of the alimentary tract has been performed a number of times in almost all of the large clinics of the country The union to stomach, duodenum, small intestine and colon has been variously performed for a wide variety of lesions Theoretically, an anastomosis can be made between the gallbladder, hepatic duct common duct and any contiguous bowel surface thus (1) anastomosis between the gallbladder and various portions of the gastro-intestinal tract—cholecystogastrostomy, cholecystoduodenostomy, cholecystenterostomy, cholecystocolostomy (2) anastomosis between the hepatic duct and the stomach, duodenum or a portion of the small intestine, (3) anastomosis between the common duct and the stomach, duodenum or small intestine

The choice of a particular operation will depend on a number of factors, such as (1) the physiologic efficiency of the procedure, (2) the ease of technical accomplishment, (3) the relative immunity from ascending infection, (4) the immediate effect on the physiologic chemistry of the gastro-intestinal tract, (5) the remote effect on the patient's metabolism, and (6) the operative mortality The classical operation of cholecystoduodenostomy will more nearly simulate the natural condition of biliary drainage than any type of operation The technical difficulties of performing cholecystoduodenostomy with a fixed duodenum and the possibility of duodenal fistula are factors which will prevent this type of anastomosis from being accepted as a uniform surgical procedure Moreover, the mortality of cholecystoduodenostomy is certainly greater than cholecystogastrostomy

Technically, the union of the gallbladder and the stomach is probably more easily performed than any other form of anastomosis as the parts are naturally in close and intimate relationship, and little, if any, mobilization is necessary to bring the viscera in apposition Cholecystenterostomy carries with it the possibilities of angulation and the necessity for a secondary entero-enterostomy to prevent kinking The union between the colon and gallbladder is physiologically defective (1) on account of the reflux of the highly charged bacterial content of the colon with an almost certain degree of ascending infection, (2) the

7 Bevan A D Present Status of the Surgery of the Bile Tract Surg Gynec & Obst **27** 49 (July) 1918

8 Courvoisier Beitrage zur Pathologie and Chirurgie der Gallen wege Leipzig 1890 p 58

9 *Cabot* A T *quoted by* Moynihan B G A The Pathology of the Living Philadelphia W B Saunders Company 1910, p 203

10 Kausch Der Hydrops des gesamten Gallensystems bei chron Choledochus verschluss Mitt a d Grenzgeb d Med u Chir **23** 138 1911 Outerbridge G W Carcinoma of the Papilla of Vater Ann Surg **57** 402 (March) 1913

possibility of reverse mucous currents from the colon as described by Bond, (3) the loss of the digestive functions of the bile, especially in the saponification of fats, (4) the fact that the bile is soon evacuated with the stool means a rapid permanent loss of the bile salts which would be normally reabsorbed from the intestines, to say nothing of the profound changes that would be induced by the lack of bile in duodenum to neutralize the acid chyme The union of the gallbladder to the colon can be summarily dismissed as being the least desirable of all forms of anastomotic surgery

A review of the experimental and clinical evidences found in the literature pertaining to gastrobiliary fistula or cholecystogastrostomy demonstrates not only that the anastomosis is rational but also that it has advantages distinctly superior to any other method of anastomosis of gallbladder to any portion of the gastro-intestinal tract The advantages of the union of the gallbladder to the stomach may be summarized thus (1) A close anatomic apposition of the two viscera is easily accomplished, (2) the delivery of bile into the gastro-intestinal tract at an approximately normal point, (3) the facility of visceral mobilization and the ease of technical performance by reason of the fact that the anastomosis is between two viscera of fairly well developed size and thickness, (4) the adequate sterilizing mechanism of the stomach prevents ascending infection together with the known absence of infection in operations on the stomach and gallbladder,[11] and (5) minimal mortality

Physiologically considered, there is no objection to the presence of bile in the stomach as has been demonstrated so often clinically and proved by experiments on animals

In an experimental study by Grey,[12] in which cholecystogastrostomy was performed with complete division of the common duct, it was demonstrated that on a diet of meat and water, with bile constantly present in the stomach throughout the course of digestion, there was no appreciable effect on the acidity of the gastric content Postmortem examination showed a functioning union, and the gastric mucosa showed no pathologic changes

The presence of bile in the stomach produces no directly harmful influences It is found constantly after gastro-enterostomy and the Polya operation and its regurgitation with the various tests for pancreatic and biliary function suggests that it is tolerated by the stomach with impunity At the completion of gastric digestion, duodenal contents flow back into the stomach through the relaxed pylorus[13] In animals that have been fasting, intestinal juice will continuously run out of a gastric fistula Rehfuss[14] found bile in the fasting stomachs of most of the normal students examined Contrary to the usual conception, the normal reaction in the pyloric end of the stomach is actually alkaline, the hydrochloric acid being secreted mainly by the glands of the proximal two thirds, and it would seem that in the inactive or resting phase of the stomach bile is constantly present in the antrum[15] If the alkalization of the stomach is the chemical means for the cure of gastric ulcer—a view taken by many surgeons—then there can be no valid objection to a technical procedure which will deliver the biliary current just proximate to the pyloric ring by a cholecystogastrostomy

For performing a cholecystogastrostomy, it is necessary to have a gallbladder with a patulous cystic duct, with relatively normal walls, or not too seriously diseased in order that the gallbladder and cystic duct may properly function as a delivery tube from the common hepatic duct to the stomach After union of the gallbladder with the stomach, the gallbladder probably contracts and elongates into a small tubular channel Roentgen-ray studies in cases in which cholecystogastrostomy has been performed showed that bismuth or barium do not enter the gallbladder[16] In functional determination of the gastric acidity after cholecystogastrostomy, the amount of free acid is not less than the normal amount, although there is a varying diminution in the total acidity

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ABSTRACT OF DISCUSSION

DR JOHN B DEAVER Philadelphia I am inclined to attribute the emaciation sometimes associated with jaundice to the toxic effect of the bile in the blood rather than to the difficulty in the absorption of fats What proof is there that the loss of bile per se is harmful? In the treatment of chronic, as well as in some cases of subacute, pancreatitis, associated with disease of the gallbladder or bile ducts patients do just as well where bile drainage has been done to the outside through a tube in the gallbladder or in the common duct True, these patients have to wear a bottle, in the case of women in a little pocket made in the corset and in men in the underwear My patients who are discharged wearing T tubes wear the tube from nine months to two years and even as long as four years, with perfect comfort and what is more, perfect well being Cholecystogastrostomy versus cholecystoduodenostomy is more or less a Hobson's choice Both are procedures that should be used only in comparatively few cases That the gastric anastomosis is easier than the duodenal may be true, but it scarcely is an argument in its favor However, I question whether one who cannot trust himself to do the latter should do the former The duodenum may, perhaps, not always be accessible and in such instances gastric anastomosis can be made With few exceptions, I mobilize the duodenum which enables me to bring it up well enough to make this anastomosis without difficulty Cholecystoduodenostomy is certainly the more logical operation because it is the more physiologic one But in either operation, in the absence of complete obstruction of the common duct, these openings close sooner or later I have demonstrated this in a number of instances in which I have reoperated six or eight months afterward When I do a choledochostomy I often close off the tube two or three times a day for a short time convalescence being well established In pancreatic or other cases in which patients are discharged with the T tube in place, they are instructed to clamp it off occasionally with the hope that the bile itself will get in the intestine I certainly would not advocate the operation of cholecystogastrostomy in the treatment of ulcer Considering the good results obtained in the treatment of gastric ulcer by excision of the ulcer combined with posterior gastro-enterostomy or by partial gastrectomy it certainly does not seem justifiable to use so extreme and unphysiologic an operation as cholecystogastrostomy for these ulcers

DR E STARR JUDD Rochester Minn There is no question that many patients are cured by cholecystostomy or

11 Deaver J B Surgery of the Upper Abdomen Philadelphia P Blakiston's Sons & Co 1921 p 41
12 Grey E G An Experimental Study of the Effect of Cholecystogastrostomy on Gastric Acidity J Exper Med **23** 15 24 1916
13 Alvarez W C The Motor Functions of the Intestine from a New Point of View J A M A **65** 388 (July 31) 1915
14 Rehfuss M E Bergeim Olaf and Hawk P B The Question of the Residuum Found in the Empty Stomach J A M A **62** 11 (July 4) 1914
15 Hertz A F The Sensibility of the Alimentary Canal London Oxford Press 1911 p 58

6 Jacobson J H Anastomosis of the Gallbladder to the Stomach (cholecystogastrostomy Am J Obst and Dis Wom and Chil **70**, 1914

choledochostomy One point is sometimes overlooked In anastomosing the fundus of the gallbladder and the intestine, the bile will not drain through the anastomosis unless there is practically a complete obstruction of the common duct We have found cholecystogastrostomy in cases of complete jaundice more satisfactory than cholecystoduodenostomy, although, when the latter can be done as easily, we still employ it in some cases We should continually bear in mind that in some of these cases the lesion is a carcinoma of the head of the pancreas, and that in others it may be a chronic pancreatitis This emphasizes the point Dr Heyd brought out, that under ordinary circumstances, these cases of painless jaundice should be explored Considerable work is being done on preliminary treatment in jaundice cases The risk from hemorrhage after operating in jaundice cases is being reduced considerably by the intravenous administration of calcium and by repeated transfusions

DR. MOSES BEHREND, Philadelphia There is no question that the operation of cholecystogastrostomy has been performed for conditions for which it should not be done for instance, gastric ulcer Whenever we can we ought to anastomose the gallbladder and the duodenum That is true But there are conditions in which it is impossible to bring up the duodenum to the stomach Therefore, the proper thing to do is to anastomose the gallbladder to the stomach Patients may vomit for from twelve to twenty-four hours after the operation but following that they are comfortable, and free from symptoms Our anastomotic openings have stayed patulous and have given the greatest relief If I wanted to have this operation performed and were to choose between external and internal drainage, I would much prefer an internal drainage operation I believe there is less discomfort with internal drainage than with external drainage We cannot always tell whether there is carcinoma at the head of the pancreas I operated on a patient three years after Dr Deaver performed a cholecystectomy for cholelithiasis I drained the common duct for about six months with a T tube The patient was apparently well for two and a half years Then she began to have symptoms again of pancreatitis I thought she had carcinoma of the pancreas and performed a choledochogastrostomy This patient has been well for seven months with absolute relief of jaundice and pain It is an operation that can be recommended and I sincerely hope it will be performed many times hereafter

DR JOHN J GILBRIDE, Philadelphia Dr Heyd has given you Courvoisier's law, which is that there is a dilated gallbladder under certain conditions and a contracted gallbladder under other conditions Therefore, the appellation "Courvoisier's gallbladder" is not a good one In all these cases of anastomosis of the biliary passages with the gastrointestinal tract there is more or less continuous drainage of bile This is also true after cholecystectomy I occasionally see cases of cholecystectomy with regurgitation of bile, especially those cases in which there are many adhesions Attacks of vomiting and various other gastric disturbances continue off and on for weeks at a time We should not anastomose the gallbladder to the stomach for gastric ulcer If bile does any good for gastric ulcer it should be effective in duodenal ulcer below the papilla of Vater It evidently is not We all agree with Dr Heyd as to the advisability of operating in cases of chronic jaundice because of the possibility of error in the diagnosis The ideal operation is anastomosis of the gallbladder with the duodenum Occasionally one sees a duodenum whose walls are so soft as not to hold the suture In four cases of chronic jaundice due to malignant disease of the head of the pancreas that I have seen there was no itching The first case of this kind came under my observation in 1905, and I was impressed by the absence of scratch marks on the body, although the patient was deeply jaundiced Therefore, it occurred to me that there might be a difference, aside from color, between the jaundice caused by malignant disease and the jaundice of nonmalignant disease Physiologists teach that the itching associated with jaundice is due to one of the bile salts I have thought that the itching is due to infection If that is true, there would be an absence of itching in jaundice from any cause when not associated with infection

DR CHARLES GORDON HEYD, New York If nature intended bile to be excreted, she would have devised an apparatus to perform this function as she does with the urinary system Again, bile is delivered at the first portion of the small intestine where absorption takes place Furthermore, we know that after cholecystostomy the amount of bile salts in the bile diminishes to one-tenth the normal amount and there is a condition of exhaustion due to the too rapid loss of bile salts as Gerster brought out when he urged the feeding of cholecystomized patients with their own biliary discharge Dr Deaver states that he clamps off the tube in his cases periodically to prevent the too rapid loss of bile In chronic pancreatitis it does not matter whether you drain internally or externally I was advocating this operation primarily for permanent occlusive processes of the common duct, I did not intend to "ride" the operation as a cure for gastric ulcer As to the apparent contradiction pointed out by Dr Deaver as to not diminishing the acidity of the gastric contents by cholecystogastrostomy I would draw attention to the fact that the normal reaction at the terminal or antral portion of the stomach is alkaline, and that an alkaline fluid at the outlet of the stomach does not necessarily interfere with acidification or acid digestion in the proximate two thirds of the stomach

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THE USE OF EXPERIMENTAL PSYCHOLOGY IN THE PRACTICE OF MEDICINE *

EDMUND JACOBSON, M A, PH D, M D
CHICAGO

It is often said that much of the practice of medicine consists of understanding the psychology of the patient The experienced physician does not fail to estimate personality, looking for signs of irritability or emotion or hypochondria In this way he may be aided in deciding to what extent the symptoms are merely subjective, and may learn how best to handle the individual Every one knows that even if there is organic disorder, successful treatment may depend on keeping the patient in a favorable state of mind—perhaps cheerful and occupied and obedient to general directions In all of this, suggestion is commonly used Accordingly, we may agree that every practitioner makes use of some type of psychology, whether he knows it or not, but the point to be emphasized here is that such knowledge used by the average physician today as a rule is based merely on his individual opinions and his general experience with persons in everyday life, and so does not differ from what the intelligent lawyer or layman might use under like circumstances His knowledge of the mind does not come from the laboratory, and is popular rather than scientific

A first step toward giving the average physician a groundwork in scientific psychology has been taken by many medical schools of this country in making that study a part of the premedical requirement Evidently this is good, so far as it goes, but the student often complains, and with justice, that it falls far short of satisfying his future practical and scientific needs He is carried through elementary studies of sensation, perception, attention memory and the like, and finds little indeed in all of this that seems to bear directly on his *future medical work* Kahnne complains of the same sort of thing in Germany Every one knows the reason for this deficiency

* Read before the Section on Nervous and Mental Diseases at the Seventy Second Annual Session of the American Medical Association Boston June 1921

in our curriculums experimental psychologists have more largely turned their attention to education and other branches, and have somewhat neglected the application to general medicine Yet when one recalls the general importance of psychology, it is almost amazing that the modern practice of medicine has so much delayed the placing of foundation stones on a firm experimental basis

Although physiology is now commonly taught in connection with laboratory experiments at every step and psychology is often handled likewise, yet there still are many exceptions Apparently, if we admit this evil it can be corrected only through a growing recognition of the difference between the general psychologist and the experimental psychologist and through insistence that work for the medical student always be presented from the experimental standpoint

As applied to medicine, experimental psychology falls principally into two parts (1) in relation to psychiatry and (2) in relation to general medicine As the former already has attained a flourishing growth, it would seem worth while to begin there, and so—even at the risk of repeating things already known to you—briefly to review and discuss some of the outstanding methods, instruments and results

EXPERIMENTAL PSYCHOLOGY

The instruments used in experimental psychopathology give ocular proof of the growth of that science Besides apparatus familiar also in the physiologic laboratory, such as the pneumograph, Marey tambour and sphygmograph, there have been developed an amazing array of special devices One may mention the plethysmograph, and its well known use for recording changes in circulation of a part during mental activity The string galvanometer of Einthoven was in general use for the study of emotion long before that instrument became so common for electrocardiography The study of tremors was reduced to a fine point when Sommer, improving on methods previously employed at Harvard, developed his machine for recording movements of the extremities in three directions, and since then has been turned to chorea hystero-epilepsy and other disorders Of late years a device has been developed for recording tiniest movements of the eye and one also for changes in facial expression, such as wrinkling of the forehead The ingenuity shown in some of these measures is astonishing For example, in the study of vasomotor conditions, one worker has developed a means of recording so delicate a thing as flushing of the skin This is done with a Marey tambour in contact with a selected portion of the face so that as blood enters the skin, a slight pressure is made on the drum membrane The membrane in turn presses on a little column of illuminating gas, which lights a small burner As the flame then fluctuates, it affects a selenium cell causing electrical changes shown on a galvanometer provided with a needle which is deflected and so permits a record to be made on a smoked drum Many and various are the tachistoscopes for the exposition of optical stimuli each in some respect an improvement on one of the foregoing Hipp chronoscopes or tuning forks have been used to measure the time taken by mental process in terms of thousandths of a second Often this has been done in connection with reaction time The individual waits for a certain color or other object to be suddenly exposed, then at once presses on an electric telegraph key, whereupon the time interval may be measured It is clear that many of these instruments could be simplified for clinical use if interest among psychiatrists might once be sufficiently aroused

With apparatus of this sort, many and various studies have been made under controlled mental conditions and often with mathematical accuracy of the behavior or reactions of the patient, or of his physiologic functions, or of his subjective reports Of course, the reliability of the subjective report may vary with the condition of the patient, yet with time and skill the intelligent patient can often be trained to give reports no less valuable than those obtained in the laboratory Experimental psychologists draw a distinction which is of the greatest importance between mental reaction and introspection The former means any mental act in response to stimulus, as when an individual repeats numbers during a memory test, or again, when he utters aloud his associations in response to some word On the other hand, introspection or, as it is better called, the method of examination, means the act of scientifically observing conscious processes at a particular moment, that is, under controlled conditions the subject observes his sensations or attention or other mental process and gives his report to the experimenter The task often requires intelligence and special training Just as a beginning student of pathology cannot without previous experience describe the contents of a microscopic section, so also the scientific introspector is not born ready made The desired end in training the student of pathology is to teach him to observe, and to describe accurately and fully, yet to keep his observations distinct from his interpretations Such training in observation is also a goal in psychology This is perhaps not always realized by every physiologist and other workers along mental lines, who sometimes seem to ignore the existence of technical observation and literature in this field Unfortunately it may be admitted also that the method of examination of conscious processes, as developed by Wundt and his followers and in a special way also by the Wuerzberger school as well as by Binet and certain American workers, has not yet become generally known and precisely applied even among all experimental psychologists Under these conditions we must not look for too much from introspective psychology applied to psychiatry in the near future On the other hand, very much has already been done in the study of behavior, psychophysical reactions and mental activity

METHODS AND RESULTS

At the risk of boring you with relating further what you already know it seems worth while very briefly to review some of the methods and results In extensive studies of fatigue with the ergograph, it has been found that every individual has a characteristic curve of fatigue If the index finger is made to adduct repeatedly against a constant load, the normal curve is a gradual rise to a peak, then a phase in which the curve is either horizontal or convex or concave with periodic waves of highest activity due to mental or mechanical varying factors, and at the end a sudden breaking off or else a period of relatively slight movement At this point electrical stimulation may still move the muscle, where the will-impulse fails However if the weight is somewhat reduced, the muscular activity may continue in a relatively undiminished way and if the weight is correspondingly reduced as

fatigue progresses, the muscular activity may be continued practically without end Accordingly, the chief seat of this type of fatigue seems to be in the muscle rather than in the nervous system Caffein was found by Kraepelin to increase the amount of muscular work, while alcohol increased the height, although it decreased the number of possible strokes Massage helped the fatigued muscle toward a temporary recovery It seems characteristic of melancholia that the peak of the curve may be lacking, or else may be short and relatively low, followed by a rather quick decline to a low level, which remains constant for a long period On the other hand, in catatonia the contractions may be vigorous, but the distinguishing characteristic is the comparative constancy of the level of the curve There is comparatively little difference between the amount of work done by the muscle at the end as compared with the beginning of the experiment In fact, the catatonic often stops short, thus ending the curve Here, then, is graphic registration of stereotypy of movement, which would seem to have a certain diagnostic value The writing machine of Kraepelin and the simpler device of Henry have been warmly recommended for registering voluntary motor activity Records are made not alone of the speed but also of the pressure in writing In melancholia a rapid decrease of pressure and speed has been noted, while in manic excitement the opposite seems to be characteristic In catatonia, even when letters are made correctly and well, it seems characteristic that the time intervals are markedly irregular This trait seems to come and go with the phase of catatonia, and would appear to be a fine sign pathognomonic of this condition

The use of the string galvanometer for recording the objective electrical changes that take place in the presence of emotion is very well known Various workers, including Veraguth, Fere and Binswanger, have tested the emotions by passing a feeble current through the individual, using electrodes of the same material On arousing an emotion by means of spoken words, so-called "association tests," the galvanometer shows a marked deflection, and this change in conduction has been called the psychogalvanic reflex Studies have been made of catatonics, organic dements and melancholics, and most extensively of psychoneurotics, whereby objective signs of mental complexes have been gained, valuable not alone for diagnosis, but also for treatment The pneumograph also has proved of interest to various workers, the recorded breathing showing variation with the state of pleasure or discomfort, or with concentration of the attention In a case of stupor, Gregor used the test of changes of breathing made in response to sensory stimuli, in order to decide whether there was consciousness

In a brief and general paper it is impossible to do more than touch upon interesting points here and there Experiments have been made on the sense of time by having the patient compare two intervals of a fraction of a second to six seconds in length, marked off by the sound of a falling hammer In Korsakoff's psychosis it was found that the disturbance of temporal orientation is simply due to failure of attention or observation, rather than to any disturbance of some assumed sense of time Experiments on understanding have shown typical disturbances in such disorders as hebephrenia The topic of association tests is too broad to be more than touched on here They have been used, for example, in the psychologic diagnosis of epileptic psychosis by Sommer, Fuhrmann, Ritterhaus and Klepper, who applied them also to catatonic conditions As is well known, in the hands of Jung, Ricklin, Binswanger and their associates, these tests have been offered as a bridge between the older and generally accepted experimental psychology and the new candidate for recognition, namely, psychanalysis Careful methods for testing the memory in psychiatry have been worked out by Ranschburg and others, and one of the results has been some concrete suggestions for improving the memory of the mentally weak along lines that differ from education of the normal Stern developed a valuable method for getting a general idea of divers mental functions of the patient with the aid of colored pictures Isserlin opened the way toward a scientific understanding of the "flight of ideas," explaining that this disturbance is due to failure of what Ach called "determining tendencies"

What now, in summary, is the use of experiment for psychiatry? It explains, clarifies, makes precise and adds to what has been found in the clinic Fundamental ideas gained from experiment underlie the system of psychiatry of Kraepelin, and may appear in the form of brilliant investigations, such as those of the clinic of Sommer, or in the form of a general work on the diagnosis of mental disorders, such as that of Gregor

Turning now to the second part of our subject—the application of experimental psychology to the general practice of medicine—we find only occasional areas, so to speak, that have been developed The effects of drugs on divers mental and physical functions have been well studied by Kraepelin and many others, and need not here be reviewed Tests of association and of the galvanic phenomenon in functional nervous disorders, as previously said, have been extensively developed In the literature of physiology, particularly of the gastro-intestinal system and of the internal secretions, when the topic borders on emotion, work has been done which often smacks of experimental psychology At times it would seem as if the physiologic knowledge displayed were not sufficiently supported with familiarity with what had already been done in the corresponding field in psychology

IMPORTANT PROBLEMS

What now are some of the important problems of general medicine, which may be attacked with instruments and methods such as those above described or mentioned? It would seem worth while to attempt to answer this question under about eleven headings

1 *The Effects of Suggestion*.—There are several subtopics here (*a*) What can and what cannot be accomplished by suggestion on mental processes, for example, on depression, general irritability, excitability and the like? (*b*) What are the possible physical effects of suggestion, and what their limitation? This matter might best be considered in terms of the various systems of the body, namely, the effects on the gastro-intestinal or vascular or glandular system and the like In Great Britain the work of Pawlow on dogs has been repeated and similar results obtained with men, confirming some of his principles of gastric secretion with the ingenious use of hypnotic suggestion for arousing emotions (*c*) What functional or organic changes may arise in an individual or among the public as the result of suggestion? (*d*) What maladies may be improved and to what extent by suggestion, with and without other means?

Of course, such inquiries must be undertaken only with a very critical spirit under controlled conditions, with knowledge of any preceeding work, and so far as possible with mathematical accuracy It is clear also that methods of precision may be used no less in the clinic than in the laboratory However, if I understand correctly, three points must be kept in mind if such studies are to be carried out with clarity First, a clear idea of what is meant by suggestion is to be sought not so much in current definitions as in current usage If one seeks the common meaning as ordinarily employed, it seems evident that suggestion is a very broad term In one sense it may be said to apply to the mental state of any individual at any moment, since one may truly say that any mental content has been suggested, at least in part, by something else To be suggestible apparently means that an idea or mental process once aroused partly or completely fails to meet with other contrary ideas or inhibiting mental processes Again, an individual may be suggestible if his mental processes are so emotionally toned, so intense as to forestall inhibition A familiar example of suggestibility is the hypochrondriac who overhears the recital of some cardiac symptom and at once presumes that he has heart trouble It seems worth while to dwell on these fundamental conditions of suggestion, if only because of the danger of individual groups of workers taking too limited a view of the field For instance, certain psychanalysts have recently put forth the theory that suggestion is but a form of "transference" Now possibly their point of view is correct so far as that form of suggestion is concerned which arises through the influence of one personality on another, as in hypnosis, but apparently what needs to be kept clear is that the common usage of the term, suggestion, is broader than the personal variety, and can no more be fully expressed in terms of transference than can attention or memory or other like fundamental psychophysical process A second point that seems worth making is that there are varieties of suggestion Therapeutic suggestion generally means the effect of belief since with certain ailments, when we arouse the belief of the patient that he will get well, the result is said to follow Evidently it is not a matter of no account whether a therapeutic suggestion or belief is aroused by the words of the physician or by a drug or by electricity or by hypnosis In each of these cases we have what may be called a different *vehicle* of suggestion, and the possibility of cure, indeed, the very mechanism and the precise character of the result, may vary with the character of the vehicle Finally, it seems worth while to emphasize that ever since Braid and Bernheim made the conception of suggestion familiar and popular it has become almost a fad with some persons to attempt to explain every mental effect on the basis of suggestion Of course, any student of experimental psychology will testify that this is not so, but rather that suggestion is only one form of mental influence Among other types of mental influence may be named the effects of pleasure or pain, of cheerfulness, of distraction of the attention of psychophysical rest or overexcitement and of what has been technically called the "Aufgabe" or "task consciousness" or "determining tendencies" of Ach In short, experimental psychology teaches that we must not be too prone to call every new form of treatment suggestion Those persons for example, who are inclined to believe that all electrical therapy is purely suggestive will do well to read R Sommer's article on electrochemical therapy published in 1913, in which he shows that the theory of suggestion has been exaggerated in that field, certain effects indeed being due to suggestion and certain others to the specific character of the anode and cathode

2 *Faith or Confidence*—It would be of moment to get very carefully controlled data as to the effect under given conditions of the faith of the patient that he will get well Is there any indirect way in which such faith may influence organic disorders of any type or to any extent?

3 *Emotion*—Types that may be considered are pleasure and pain, cheerfulness, melancholy and excitement It is to be studied (*a*) in endocrine disturbances and (*b*) in other disorders It may be of special interest to inquire (I) In what disorders and at what stages does a characteristic emotional tone appear and what are its physical correlations? (II) What are the emotional characteristics of a particular disease, such as diabetes or tuberculosis? (III) What are the possible influences of emotional tone on the course of disease? (IV) In what way may treatment be assisted by stimulation of a desired emotional tone?

4 *The Origin of Subjective Symptoms*—It is commonly known that a particular organic malady may be present within certain limits with or without symptoms One individual will suffer in various ways where the other may scarcely notice the affliction In this manner some persons often complain of gastric distress where there is apparent absence of any organic change while another individual scarcely knows he has been ill until his surgeon suddenly finds an ulcer that has perforated From this it would seem clear that the symptoms of a malady are not necessarily to be traced entirely to the anatomic pathology but rather are in part a function of the nervous and mental constitution of the individual Possibly from this point of view various chapters of medicine may at some future time be somewhat modified Another matter that seems important is the distinction between pain and suffering By pain is meant the sensation produced by some destructive stimulus, it is a specific type of sensation of specific pain nerves or else the sensation produced by marked overstimulation of any sensory nerve Suffering is quite different from this, apparently it means reaction to pain For example, one individual may remain calm in the presence of a painful stimulus which causes another to fidget and fume It can readily be shown that this is not due to the nerves of one individual being more sensitive or painful than those of the other, but rather in large measure is due to the habits of motor and associative reaction—that is, the general overexcitability Likewise virtually any type of sensation, no matter how painless in the strict sense may cause suffering corresponding to the associations it arouses For instance, the sight of a child may cause suffering to a mother bereft of her own offspring

5 *Psychologic Features of Work and Rest, and Their Influence on the Course of Disease*

6 *Distraction of the Attention*—The possible effects on functional and organic disorders is a large field that calls for investigation

7 *Mental Factors in Particular Diseases*—It will be of interest to study the effect of mental influences, such as pain or emotion or suggestion, on the gastro-intestinal and other systems

8 *Can Functional Disturbance Lead to Organic Disorder? If so, in what way?* Osler mentions worry and

mental shock as sometimes exciting causes of gouty arthritis, while depressive influences, such as disappointment in love or dread of the disease itself, as sometimes having an important influence in leading to hyperthyroidism Joslyn states that a strenuous life may predispose to diabetes

9 *A Systematic Study of Mental Conditions in Individual Diseases*—Instances of this may be infectious fevers, constitutional maladies such as diabetes, or again cardiac or particular alimentary disorders

10 *Psychophysiology of Anesthetics*—The work of Crile and perhaps also certain articles in the *American Journal of Psychology* provide an opening wedge here

11 *Psychology of Prognosis*—Every physician has met instances wherein an unfavorable prognosis, although justified by the pathology, has nevertheless proved of damage to the patient's nervous welfare Psychologic consideration makes it clear that the physician may with tact be candid and yet take into account the possible effects of his own words and attitude as part of his therapeutic relations to the patient

CONCLUSION

One may venture to express the belief or at least the hope that with the future development of experimental psychology applied to medicine, a new period of treatment may gradually arise, not merely for functional but also for organic conditions a period in which the internist will not be content with considering the nervous and mental aspects of disease utterly out of his domain, a period in which it will not be considered sufficient to doctor the body alone, or in other instances the mind alone, but rather the assumption as a rule that, with every patient and in practically every malady, there is both a physical and a mental side that may demand delicate attention From this point of view therapeutics in general should have a combined physical and mental approach

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ABSTRACT OF DISCUSSION

DR ISADOR H CORIAT, Boston At present my psychotherapy is psychanalysis The most important aspect of medical psychology is the therapeutic aspect, and as psychiatrists we must emphasize this therapeutic aspect The association tests I have used less and less, for I found that the associations would merely stimulate the foreconscious and did not reach the unconscious motives Suggestion, either waking or hypnotic, is but a form of transference and if a patient transfers well to suggestion, it is successful, and if not, it is unsuccessful I have become more and more skeptical in the therapeutic value of suggestion because the psychoneurotic does not really want to get well or eliminate those unconscious desires which keep his neurosis active That is the chief reason why suggestion has been wrecked and why the analytic investigation has been of such tremendous value in the cure or amelioration of neuroses and psychoneuroses

DR ELLA G STONE, Boston How could you eliminate suggestion from psychanalysis?

DR. CORIAT There are two kinds of psychanalysis the first by expert and practical analysts, who are at the same time neuropsychiatrists, the second by mere dabblers and amateurs In the hands of expert analysts, suggestion does not enter for it is eliminated very carefully Secondly, there is a form of psychanalysis, called by Freud wild psychanalysis, in that suggestion is used and all sorts of incorrect advice given to the patient No trained psychanalyst uses suggestion, if he uses it, he is not a trained psychanalyst

DR. CHARLES R BALL, St Paul I have long had a feeling that the medical profession has not lived up to its opportunities in the use of psychic methods in the treatment of its patients As I have gone about our Minnesota towns and have seen the increasing number of osteopaths and chiropractors the truth of this statement has been borne in on me If we consider the manner of the osteopath's diagnosis and his method of procedure, we shall realize that he, in a psychologic way, has the advantage There are many patients in whom we cannot find anything wrong, yet they are always complaining and are very sensitive about these complaints They go to the practitioner of medicine, who is unable to find anything the matter with them, and consequently he tells them to go home and brace up—good enough advice, but far from being satisfactory to the patient who feels he is already under some degree of suspicion by his family and friends as to the genuineness of his symptoms So, somewhat offended in his pride, he goes to an osteopath, who immediately finds that a bone is out of place or is pressing on a nerve and at once there is self-justification for the patient in the complaints he has been voicing, he has something to show for them He feels that he has been vindicated If the osteopath is vigorous in his handling of the dislocated bone, he can obtain a snap audible to the patient as it supposedly slips back into place, which is further proof to the latter that he had very good reason for his complaints In this way the osteopath gets the better of the more honest hard working physician, who has been too much obsessed by his knowledge of the physical condition of his patient and too little impressed with the importance of the psychic When no adequate physical explanation can be found to explain the patient's symptoms it is a near thought that some psychic basis exists, but it is not often that we take the trouble to search for it In regard to the unconscious suggestion briefly referred to, I cannot see how something the patient has completely forgotten about is going to be very much of a factor in the causation of his symptoms The repression of unpleasant things is one of our natural defensive reactions, and the more completely we can repress them the better we are off Everybody recognizes the truth of this We are consciously or unconsciously trying to forget the things which disturb us and if we are able to do this successfully, we secure peace of mind If we are unable, we continue to be unhappy While I think suggestion is only a palliative procedure I do not see how we can afford to neglect the powerful therapeutic value of it in our contact with out patient If we wish to utilize all the means at our command in the treatment of our patients, we must not forget the positive value of suggestion skilfully applied which often succeeds when medicines fail

DR C R WOODSON, St Joseph Mo The plain English of psychotherapy is one's ability to divert the mind of the patient and honest suggestion is far better than dishonest suggestion The one who has power to gain confidence and hold confidence must be honest The one who does so by deception, misrepresentation and solely to divert, loses confidence The one who can entertain and take the mind off of self by suggestion or conversation is curing The individual who worries because of thinking of self, some imaginary trouble, by hesitating or doubting does not do well To get the mind off of self by thinking of more pleasant things, by seeing everything it comes in contact with, by thinking of the pleasant things and letting the unpleasant or imaginary things pass should be the desire of every good nurse The nurse who is capable of entertaining or diverting or getting the mind off of self is a very valuable adjunct in treatment

DR HENRY KELLER New York Dr Jacobson tried to emphasize the necessity of introducing properly controlled psychologic methods into medicine instead of haphazard guesswork As an orthopedic surgeon, I feel that were I to eliminate psychology from my practice I should certainly do an injustice to my patients In addition to a requisite knowledge of kinesthetic equivalents and sensations which is needed in order to interpret pain sensations coming from joints, tendons and muscles, one must also be conversant with distance and color perceptions in children and other characteristics peculiar to the child, and utilize it to encourage active cooperation in Erb's palsy and infantile paralysis, etc Many patients after a trauma or contusion of muscles

near a joint cannot be induced to use their muscles voluntarily unless they have first been convinced of the contractile power of the muscles through electric stimulation Hence, the electric battery will be the psychologic factor in restoring the normal function of the injured limb However, in addition to using every scientific method for the purpose of ascertaining the nature of the ailment of the patient who is seeking relief, we must not forget that we are dealing with human beings, and not with laboratory apparatus We must use judgment how to deal with each patient individually, and all our knowledge, experience and doings must needs be fixed with an appreciable grain of common sense Only in that way shall we be able to get the best of the chiropractors, osteopaths and all other cults whose sole claim to cure patients is based on that which we as physicians frequently lose sight of, namely, that every sufferer must be approached through his cranium With Socrates we can say, "This is the great error of our day in the treatment of the human body, that physicians separate the soul from the body"

DR WALTER F ROBIE Baldwinsville, Mass One speaker said that analysts attempt to eliminate suggestion That is utterly impossible I do not think any one can speak to an audience without conveying a suggestion I translate transference as sympathy, and I wish to register my approval of suggestion as being efficacious Freud, Jung, in fact, the whole coterie of psychanalysts, convey suggestions to me when I read them, they use suggestion with every patient

DR. MINER H A EVANS, Boston There seems to be some confusion about what we mean by the term suggestion Any mental or psychologic process which is set up in the patient and leads to some change in his attitude, whether the change is in the direction of his attention or some alteration of his interest in his problem, is suggestion In this sense I suppose all education is the result of suggestion I do not believe it is possible to eliminate suggestion from any method of treatment However technical and high grade the analysis, and however industrious the effort of the analyst, it is impossible for him to know just what processes have been initiated in the mind of his patient And it is impossible for him to know the ultimate results of these processes Changes in the attitude of a patient toward his illness may begin before he sees the analyst at all It may begin when, after much uncertainty, he finally decides to go and be analyzed

DR EDMUND JACOBSON, Chicago Suggestion is, of course, not the only topic of experimental psychology, but if there is such general interest in it, as is apparent from the expressions brought out, most of the questions that have been raised might well be worked out by way of carefully conducted experiments So long as such matters of discussion are left to general opinion, they remain speculative and only by separating them into particular problems can one get conclusions that are reliable It was farthest from my purpose to introduce the topic of psychanalysis My task was not to discuss the possible status of that subject, or to inquire whether there are such things as unconscious mental processes, for it is clear that the general practice of medicine does not involve some supposed unconscious mental process on the part of every patient who visits the office for advice and diagnosis But it does involve a general psychology, since every ailment has some mental aspect, and this calls for the application of general principles, for which there is urgent need of an experimental basis The patient's mental life must be studied, and this evidently means that there is a diagnostic as well as a therapeutic phase of psychology applied to medicine If the point of view of experimental psychology is correct, suggestion is by no means the only method of psychotherapy, just as psychanalysis is by no means the only method of psychotherapy There would seem to be too much of a tendency of this or that school's assuming that its own interests comprise the whole of medicine, and thereby failing to appreciate the accomplishment of others Suggestion, however valuable, has its distinct limits and various other methods are available The general principles of experimental psychology, if introduced into medicine, may put observation in the place of opinion and speculation, and may lead to a better understanding of the human material one deals with

DETERMINATION OF THE BASAL METABOLISM

AS A METHOD OF DIAGNOSIS AND AS A GUIDE TO TREATMENT *

JAMES H MEANS, M D
BOSTON

The preceding papers in this symposium have set forth the fundamental principles of the subject in hand, human calorimetry and the basal metabolism of man

It will be my purpose to discuss briefly the role that calorimetry plays in the clinic of today, the help that calorimetric observations may be expected to give to the clinician both in diagnosis and in therapeutics, and the nature of this help, particularly its extent and its limitations

The medical profession of this country is indebted to Atwater and to Benedict and to their collaborators for a vast fund of information on the energy metabolism of the normal human being under nearly every conceivable condition To Benedict also and his collaborators, and to Du Bois and his collaborators, the profession is indebted for the introduction and application of the science of calorimetry to clinical problems It was with the development of an accurate surface area formula by Eugene H and Delafield Du Bois [1] that clinical calorimetry really became a practical possibility, for it supplied the previously lacking prime requisite, an accurate method of judging of the normality or lack of normality of any given person's metabolism

Since the advent of this formula, the measurement of the gas exchange and the calculation of the heat production therefrom, that is to say, indirect calorimetry has come into increasingly wide use in American clinics so that today there is a reasonably extensive literature on the subject The work of Boothby [2] at the Brigham Hospital, Boston, and that with which I [3] have been concerned at the Massachusetts General Hospital, is, I believe, among the earliest of the sort The latter work was begun in 1914

The practical application of calorimetry to the clinic has been chiefly in the group of thyroid diseases, and in the following remarks it is with them I shall have chiefly to deal In other fields, however, certain helpful information has been gathered which I shall discuss briefly a little later on

Before considering the metabolism in disease, a remark is in order regarding that of the normal person The physiologist is oftentimes impressed with the unaccountable variations in metabolism of essentially similar normal persons, and for that reason he may feel that the clinician is not justified in assuming a definite standard for normal metabolism, as is now done From the physiologist's point of view, he is correct There are differences in the metabolism of normal persons that are not explainable on the basis of size,

* Read before the joint meeting of the Section on Practice of Medicine the Section on Pharmacology and Therapeutics and the Section on Pathology and Physiology at the Seventy Second Annual Session of the American Medical Association Boston June 1921

* This article and the one by Du Bois which follows are part of a symposium on Basal Metabolism The previous articles by Drs Plummer Benedict Lusk and Boothby appeared last week The complete symposium including the discussion will be published in pamphlet form

1 Du Bois Delafield and Du Bois E F The Measurement of the Surface Area of Man Arch Int Med **15** 868 (May) 1915

2 Boothby W M Boston M & S J **175** 564 (Oct 19) 1916

3 Means J H Boston M & S J **174** 864 (June 15) 1916

weight, form, age or sex. Nevertheless, these variations are slight compared with the gross differences found in disease. The physiologist, accustomed to measuring bodily processes by methods of precision, is impressed by the slight differences which the metabolism of normal subjects shows, the clinician on the other hand, obliged as he generally is to estimate abnormalities of function by the qualitative information gained by observation at the bedside, is impressed by the constancy of the metabolism of normal persons.

We are familiar with a number of physiologic constants. None of these are constant in an absolute sense. They are so to speak, relative constants. From one point of view they may not be constants at all, from another they may present a high grade of constancy. For example, any change in the reaction of the blood except within a minute range is incompatible with life. Indeed our whole physiologic economy in a sense seems to be regulated to preserve this factor constant. It is one of the most striking constants in nature and yet within a narrow range it is a variable. The same may be said of the body temperature, the basal metabolism and in a very limited way of the pulse rate.

It would seem absurd to say that the normal pulse rate is a constant; it is not, and yet it varies within sufficiently understood limits for us to recognize pathologic rates, tachycardia and bradycardia. To that extent it may be considered a constant. It would be equally absurd to fix any arbitrary limits above or below which a pulse rate was considered abnormal, but this does not prevent us from saying that a resting pulse of 40 is a bradycardia or one of 90 a tachycardia. The same reasoning may be applied to the basal

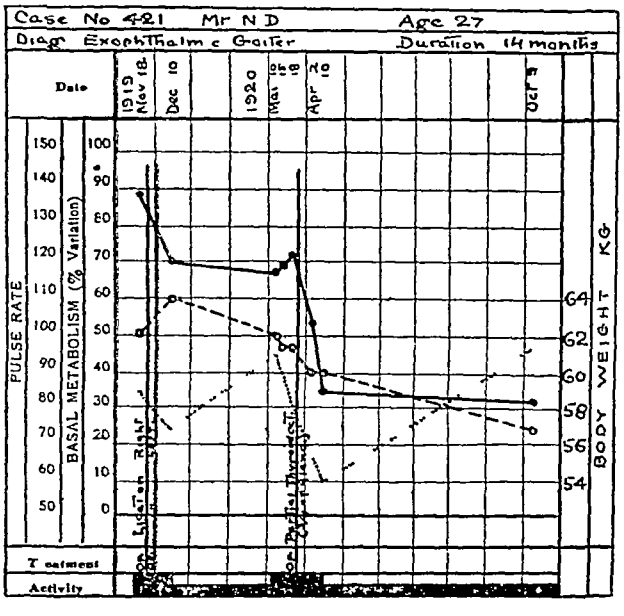

Chart 1 (Case 1).—Basal metabolism (per cent of variation from Sage Institute standard) shown by the solid black line and dots; pulse by interrupted line and circles; weight by the dotted line. Under Treatment the type and time of operation is shown. Under Activity the rest factor is indicated. When the space is entirely black it denotes complete rest in bed; half black, partial rest, when blank that the patient is following his ordinary mode of life. The same system will be followed in the succeeding charts.

metabolism. Only here the normal range of variation is distinctly less than in the case of the pulse. It is more nearly a constant than is the pulse, and is therefore a more accurate index of disturbed function than is the pulse, at least as between different individuals.

With the metabolism, as with the pulse, it is illogical in a sense to fix arbitrary limits of variation and to consider the metabolism abnormal if it falls outside them. Yet for convenience we may do so if we at all times bear in mind the arbitrariness of the procedure. When we say that a given patient has a bradycardia, we are in our own minds fixing an arbitrary low limit for the

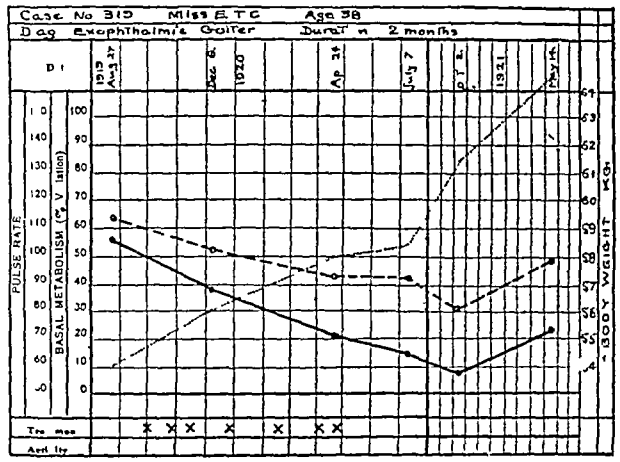

Chart 2 (Case 2).—Under Treatment, ' \ denotes a roentgen ray treatment. It will mean the same in succeeding charts.

normal pulse. This is a justifiable and useful mental process. It is legitimate to do the same in the case of the metabolism.

In interpreting the significance of abnormal metabolism findings in patients, we must correlate them with clinical findings and weigh their probable importance in comparison with every other sort of evidence in any given case, exactly as we should do in interpreting any other laboratory or special finding, such as roentgen-ray, phenolsulphonephthalein test, blood sugar, and the like. We must not rush off and say that, because a given patient's metabolism was 25 per cent above the normal standard or prediction figure, he has hyperthyroidism. The high finding may have been due to some other disease, pernicious anemia, or leukemia perhaps or possibly to the fact that although we neglected to take his temperature he had a fever at the time the test was made. Such warnings might seem to be unnecessary, but yet I feel that with the wide popularity that clinical calorimetry has suddenly met, they are in order. So too, is a warning against inaccurate technic in order. This has already been given by various writers. It will bear repetition particularly for the reason that various instrument makers are exploiting the sale of metabolism apparatus and are trying to convince the practitioner that he needs a metabolism machine in his office quite as much as he does a stethoscope in his pocket. Furthermore, simplified metabolism apparatus of one sort and another is making its appearance in the advertising pages of our journals before it has been described in their scientific columns. The widespread application of calorimetry by persons who do not take the trouble to acquaint themselves thoroughly with the literature and technic of the procedure is fraught with danger, danger to the individual patient through faulty interpretation of results, danger to the profession at large through the publication of erroneous results, that is to say, to the reporting as evidence of a pathologic condition in the patient an abnormal finding which is in actuality the result of technical error.

I am frequently asked either by practitioners or by clinics whether they ought to set up a metabolism laboratory I tell them that I cannot see that they are under any obligation to do so, and that whether or not it will be desirable for them to do so will depend on their special needs The up-to-date clinic is really obliged now to make Wassermann tests, as I see, it is not at all in that sense obliged to make metabolism determinations The metabolism determinations in the management of thyroid cases, for it is with them that it has its chief use, is in general a refinement rather than a necessity We could undoubtedly take reasonably good care of typhoid patients if we were deprived of the clinical thermometer, so we can with our thyroid patients without a metabolism apparatus The metabolism determination in the thyroid case is of less importance than is the thermometer in typhoid Furthermore, it is easier to make inaccurate observations with a metabolism apparatus than with a thermometer It is far better to make no metabolism tests than to make them inaccurately But, with these warnings and limitations in mind, it seems to me that it can be said that, for the clinic or practitioner handling a considerable number of thyroid cases, facilities for making metabolism observations will be a help They will give a somewhat more accurate conception of the intensity of the disease than will clinical observation alone, they will add a quantitative aspect to the impression of the case that will, to say the least, be of assistance, and in the differential diagnosis of borderline cases they will be very valuable

The actual help afforded in thyroid disease can best be observed by some illustrative cases My purpose at

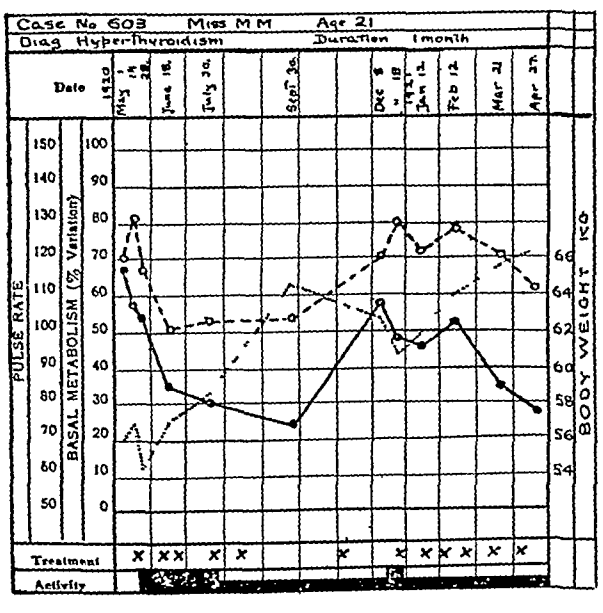

Chart 3.—Basal metabolism pulse and weight in Case 3

the present time is not in the least to discuss the treatment of hyperthyroidism The cases that I shall present will be for the purpose of showing what the metabolism determination adds to our impression of a given patient's disease

It is well recognized that one of the main functions of the thyroid is to regulate the intensity of combustion within the body When it is overactive, the basal metabolism is increased, when underactive it is decreased, above in the former instance or in the latter below what the individual's level would be if he were in a normal state The order of magnitude of these changes is somewhere in the neighborhood of a drop of from 20 to 40 per cent in myxedema, and an elevation of from 20 to 40 per cent in mild, 40 to 60 per cent in moderate, and 60 to 100 per cent in severe hyperthy-

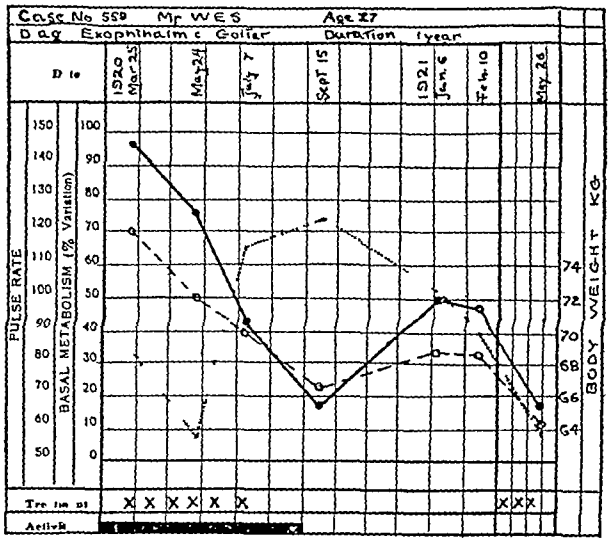

Chart 4.—Basal metabolism pulse and weight in Case 4

roidism The determination of the metabolism in the thyroid cases constitutes essentially a functional test of that gland [4]

The progress of a febrile disease is rendered more easy of visualization by the clinical chart The clinical chart in pneumonia or typhoid consists of pulse temperature and respiration curves—these are the three factors of cardinal importance A clinical chart in thyroid disease also helps visualization of progress But here the factors of first importance are the basal metabolism the pulse and the body weight These three curves, when plotted, give us information of a similar nature to that given by the usual chart of the febrile patient

It is the construction of such charts that has interested us most at the Massachusetts General Hospital [5] A series of observations, when extended over a period of months or years, gives a very striking picture of the patient's progress Such series, I believe, in general are of considerably more importance than isolated observations

Let us consider a few of these by way of illustration In the typhoid patient's chart the perpendicular lines represent days The diseases of the thyroid are for the most part chronic In our thyroid chart, therefore, the perpendicular lines are months, and while the typhoid chart at most covers a matter of a few weeks, the thyroid chart may well be extended for a period of years

ILLUSTRATIVE CASES

CASE 1.—Chart 1 is that of a man with severe exophthalmic goiter of fourteen months' duration untreated and progressing unfavorably at the time, Nov 18, 1919, he first came to our

4 Means J H and Aub J C A Study of Exophthalmic Goiter from the Point of View of the Basal Metabolism J A M A **69** 33 (July 7) 1917 Basal Metabolism in Exophthalmic Goiter Arch Int Med **24** 645 (Dec) 1919 Basal Metabolism in Hypothyroidism ibid **24** 404 (Oct) 1919

5 Means J H M Clinics N America **3** 1077 (March) 1920

clinic The disease had begun while he was in the army The chart shows at a glance the progress of this patient for a period of a year and the treatment that he received Three operations were done by Dr E P Richardson November 24, ligation of the right superior vessels, December 1, of the left and, March 24 1920, a subtotal thyroidectomy About three quarters of the gland was removed After the ligation there was a slight fall in metabolism and pulse and a slight gain in

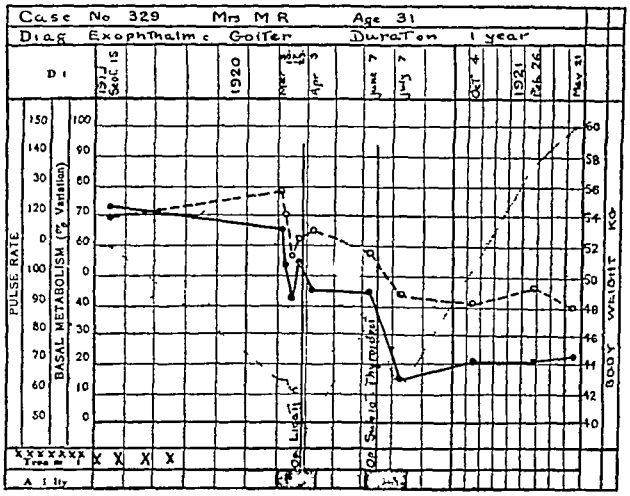

Chart 5—Basal metabolism pulse and weight in Case 5

weight, after the thyroidectomy, a striking fall in metabolism all of which occurred in the fortnight after operation Six months after operation the metabolism was essentially unchanged, still being plus 32 per cent The patient had gained weight and his pulse had fallen to a normal level Clinically he was much better, but still had some nervousness, tremor and increased sweating He was not yet able to do a full day's work

CASE 2—Chart 2 is that of a schoolmistress of 38 with a rather mild form of exophthalmic goiter which she had had apparently for only two months at the time she first visited the clinic The chart shows her progress over a period of twenty-one months during which time she received seven roentgen-ray treatments from Dr George W Holmes with absolutely nothing else in the way of therapy She pursued her normal mode of life and continued with her teaching Oct 2 1920, she was subjectively and objectively well, as, indeed she also was on May 14, 1921, though at that time metabolism and pulse showed a slight upward trend This rise may or may not be of importance But it illustrates, it seems to me the usefulness of the chart, for it puts us on our guard against a possible relapse which we might have missed on the basis of the clinical picture alone

CASE 3—Chart 3 is that of a girl of 21 with the characteristic symptoms of hyperthyroidism but with only a very slight fulness of the thyroid and with no eye signs The picture was what one may call, for want of a better name, simple hyperthyroidism Her chart covers a period of about a year During that time she had been taking quinin hydrobromid 5 grains three times a day and for about half the time ergotin 1 grain, three times a day As shown in the chart also, she had had partial or complete rest for a year Roentgen-ray treatment was started, May 18, 1920 August 11, she had had five treatments, with a marked fall in metabolism and pulse and a gain in weight, and definite subjective and objective improvement In the fall of 1920 she had a relapse with return to about the starting point A second course of roentgen-ray treatment seems to be relieving this, much as it did in the first instance

CASE 4—Chart 4 is that of a man, aged 27, with severe exophthalmic goiter of a year's duration, who had been having complete rest and quinin hydrobromid for three months under the direction of Dr Charles A McDonald when he was referred to the clinic His symptoms had begun the year before while he was serving in the navy This patient received essentially no treatment but roentgen ray Between March 25 and July 7, 1920, he received six full treatments During this period he was not working but was reasonably active and had no real rest There was a most astounding fall in basal metabolism and pulse, and gain in weight There was a corresponding clinical improvement, this was so great that against advice he returned to work His work, that of chauffeur on a fire truck, was hardly of a suitable sort for a man recently ill with exophthalmic goiter The not surprising result was that he again became thyrotoxic, which is well shown in the chart In spite of this he has continued at work and, even under these adverse circumstances, a second course of roentgen-ray treatment seems to be curing him

CASE 5—Chart 5 shows the findings in the case of a woman aged 31, who had had moderately severe exophthalmic goiter for about a year at the time the chart was started Eleven roentgen-ray treatments (seven before the chart was started) had failed to accomplish any clinical improvement or to reduce her metabolism below plus 65 per cent. It might be said, however, that she had followed her ordinary mode of life during this period A short rest in bed in the hospital then reduced her metabolism some 15 points and, March 26, 1920, Dr C A Porter ligated the superior arteries on each side Two months later the metabolism had remained at the lowered level, but had shown no further drop Dr Porter operated again and, June 16, 1920, did a subtotal thyroidectomy There was a prompt clinical improvement after that and fall in pulse and metabolism Eleven months after the last operation the metabolism was plus 24 per cent., the patient had gained considerable weight and clinically was practically well

CASE 6—Chart 6 illustrates the effect of overirradiation in exophthalmic goiter This patient a woman aged 29, had a rather mild form of the disease which she had had for a year Four roentgen-ray treatments were given between Jan 16 and March 22, 1920, and from January 12 to February 11 she had complete rest in bed in the ward She showed a marked clinical improvement and fall in metabolism and pulse The treatment was stopped April 28 1920, she reported for observation Within the last three weeks she had gained a great deal of weight, her face had become puffy and she com

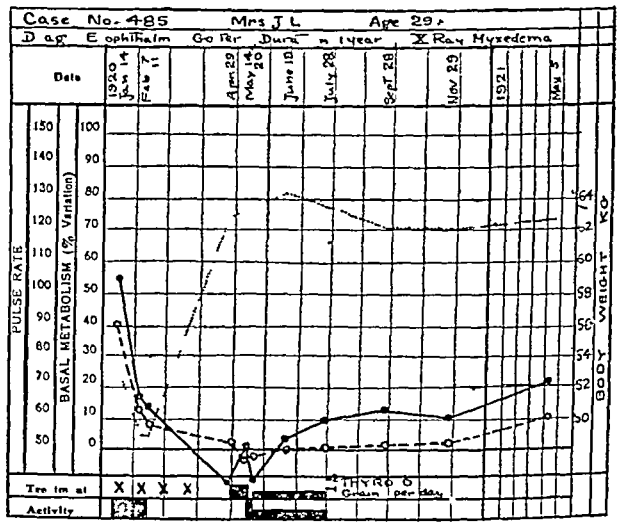

Chart 6 (Case 6)—Under Treatment the thyroid dosage is indicated by shading The first dose employed was 1½ grains per day, the next 1½ grains every other day

plained of feeling dull and dopey The picture was essentially that of myxedema The metabolism was minus 11 per cent She was started on thyroid gland, 1½ grains per day May 14 her metabolism had returned to normal The thyroid was stopped May 20, the metabolism had fallen again to minus 11 per cent Thyroid administration was begun again, but in a smaller dose, 1½ grains every other day July 28, her metabolism was plus 10 per cent, and all symptoms of hypothyroidism had gone The thyroid was stopped She was

followed for nine months more The metabolism never fell again, and no symptoms of myxedema returned, indeed, on the last observation, May 5, 1921, the metabolism was slightly supernormal, indicating that perhaps a return of her hyperthyroidism was impending, though clinical signs were lacking This case shows from both the clinical and laboratory points of view that, in certain cases at least, irradiation really seems to lower thyroid activity It also shows that in the

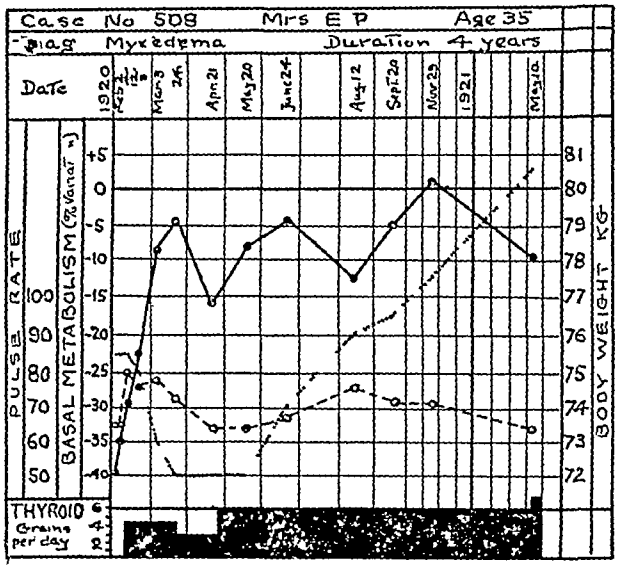

Chart 7 (Case 7) —In this and in Figure 8 Activity is not indicated Both these patients pursued throughout a normal life The dose of thyroid employed is indicated by the width of the black area

roentgen-ray treatment of exophthalmic goiter the possibility of overtreatment must be borne in mind and guarded against The very delicate response of the metabolism level to thyroid administration is also well shown by this chart

CASE 7 —Charts 7 and 8 are of patients with hypothyroidism Figure 7 is that of a woman, aged 35, with frank myxedema which had existed for four years The metabolism was promptly returned to normal by thyroid administration At the same time the weight fell and the symptoms improved The effect of a reduction in thyroid dosage is shown in the chart, a fall in metabolism and pulse The dose was again increased, with a return of the metabolism toward normal This patient has been followed for well over a year In the main her metabolism has been within normal limits, and she has been free from symptoms At the time of her last visit, because of a slight tendency to subnormal metabolism and steady gain in weight, she was told to increase the dose of thyroid still further

CASE 8 —Chart 8 also illustrates the control of thyroid dosage by metabolism findings This patient, a man, aged 29, did not have frank myxedema, he had suggestive signs only a tendency to gain weight, and some sluggishness, both mental and physical He was found to have a subnormal metabolism and was started on thyroid, 4½ grains a day brought his metabolism to normal, then a decrease to half that dose was followed by a fall The original dose was resumed and now for a year and a quarter his metabolism has been kept essentially within normal limits, and clinically he has been much improved

COMMENT

These eight charts, it is hoped, will illustrate what to my mind is the chief role of indirect calorimetry in the clinic of today, namely, the quantitative estimation of thyroid function and the accurate representation of the effects of treatment, either those measures in hyperthyroid states which are designed to reduce thyroid activity, or thyroid therapy in conditions of hypothyroidism In the latter, particularly, the discovery of the exact dose of thyroid gland which will make a given patient's metabolism assume and stay at a normal level is most fascinating

Outside of thyroid disease, the metabolism determination as a diagnostic procedure or functional test does not play an important role By that I do not mean to say that the study of a variety of pathologic states by calorimetric methods is not of fundamental importance It most assuredly is, but such studies belong primarily to research, while the matter under consideration is the, so to speak, routine use of calorimetry in the clinic The place of calorimetry in the investigation of disease does not come within the scope of the present paper

Before closing, I wish to add merely a few words as to the metabolism determination in the field of differential diagnosis From what has already been said here and elsewhere, it is obvious that when hypothyroidism or hyperthyroidism is suspected, metabolic studies will be of great assistance in the differentiation of effort syndrome and mild hyperthyroidism, for example, and of toxic from nontoxic goiters, or in the borderline hypothyroid conditions In my hands it has been particularly useful in the recognition of the latter Chart 8 is an excellent illustration of this

One other direct clinical application is in the matter of obesity Studies published elsewhere [6] have shown that in simple obesity the basal metabolism is normal Such obesity is due, to my mind, to a disproportion between food intake and bodily activity, and not to any fundamental change in the rate of combustion in the body In such persons the giving of thyroid raises the metabolism to an abnormal level, produces hyperthyroidism, in other words The treatment, then, of simple obesity with thyroid is in my opinion pernicious It relieves one evil by creating another I have, too, been impressed of late with the very common use of thyroid by the laity for purposes of weight reduction Personally, I think the sale of this drug except on prescription

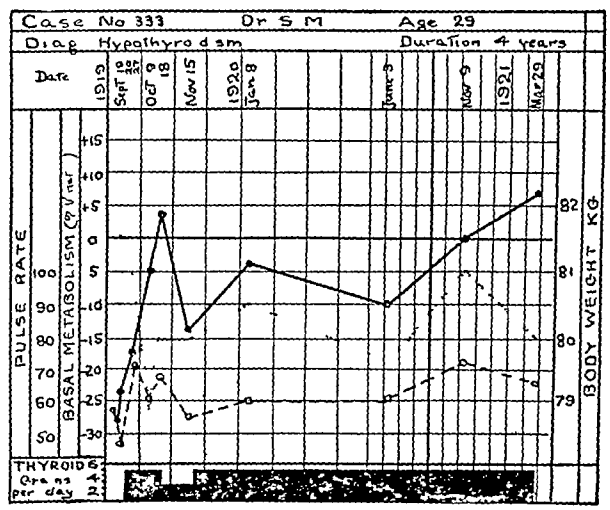

Chart 8 —Basal metabolism, pulse and weight in Case 8

should be prohibited by law Metabolism studies have convinced me that thyroid should never be given except to persons who exhibit subnormal metabolism

By means of the metabolism determination, the case of simple obesity can be differentiated from the obesity due to endocrine disease This applies not only to

6 Means J H J M Res 32 121 1915 The Basal Metabolism in Obesity Arch Int Med 17 704 (May) 1916 Means J H and Woodwell M N Ibid 27 608 (May) 1921

hypothyroid obesity but to pituitary as well In hypopituitarism there is a reduction in metabolism level just as in hypothyroidism, though perhaps of lesser degree, so that calorimetry may help us in recognizing obesity of pituitary origin also

Of diseases other than of the thyroid and pituitary in which there are alterations in basal metabolism, the most striking are the leukemias and severe anemias, particularly pernicious anemia The significance of these changes, however, is as yet not clearly understood, and they have at present no routine diagnostic or therapeutic bearing, although it is altogether likely that later they may have

In conclusion, I will simply reiterate that indirect calorimetry has furnished us with a quantitative test of the thyroid, with a method for clearly visualizing the progress of patients with thyroid disease, of accurately controlling the treatment of them, and of clinching the diagnosis in certain borderline cases It also has thrown light on the nature of obesity and has furnished us with a means of distinguishing between simple and endocrine obesity, and has demonstrated the inadvisability of treating the former condition by the administration of thyroid gland

THE BASAL METABOLISM IN FEVER*

EUGENE F DU BOIS, M D
NEW YORK

The clinician has several definite and practical questions to ask regarding the basal metabolism in fever He wishes to know whether he can calculate the total metabolism of a patient with a given degree of temperature in order to have a rational basis for the fever dietary It is important for him to know whether there is anything abnormal in the metabolism of proteins, fats, carbohydrates and water Being interested in the whole subject of fever he desires information regarding the relative importance of the various factors which increase the metabolism in hyperthermia

The answers to the questions must be sought in the voluminous literature of the last thirty years We have at our disposal a large number of experiments on animals with fever produced by lesions of the central nervous system, by drugs and by artificial infections These have been well reviewed by Richter,[1] and more recently by Barbour[2] but they do not give us much help in our problems with man We have a few experiments on men warmed artificially by hot baths, but in these the effect of the external heat outweighs the fever We have a large number of experiments on fever patients made by the Zuntz-Geppert apparatus, Benedict apparatus and similar machines which measure the heat production by means of the method of indirect calorimetry These have given us much information and have laid the foundation of our present knowledge of the metabolism in fever They have certain disadvantages since the subjects are exposed to different environmental conditions and are more or less disturbed by the application of mouth pieces or masks

The discussion in this paper will be limited almost entirely to the groups of fever patients studied in the respiration calorimeter of the Russell Sage Institute of Pathology in Bellevue Hospital, New York, between the years of 1913 and 1920 Patients and normal controls have been exposed to uniform conditions of environmental temperature and humidity They have lain almost motionless on a comfortable bed in a quiet respiration chamber for periods of from two to four hours, and in some instances all night The temperature has been read every four minutes by means of an electrical thermometer which lies about 10 cm in the rectum The heat production has been measured by the chemical methods of indirect calorimetry and by the physical methods of direct calorimetry which determine the exact heat loss by radiation and conduction and by the vaporization of water Incidentally, we may note that the close agreement of these two methods proves that the law of the conservation of energy holds good in fever patients

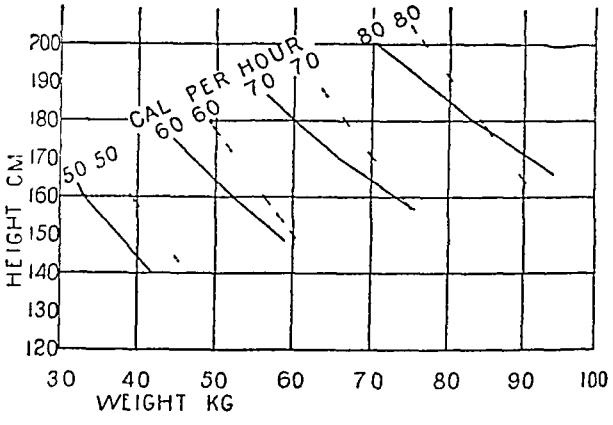

Chart 1.—A comparison of the normal standards for men 30 years old The solid curved lines give the calories per hour according to the surface area chart and standards of Aub and Du Bois The dotted lines represent the figures according to the Harris Benedict multiple prediction tables For instance a man 30 years old 180 cm tall and 60 kg. in weight would have a predicted normal basal metabolism of 70 calories per hour according to the surface area curves and about 67 calories per hour by the other method The results according to the Harris Benedict formula are lower but the two sets of lines are almost parallel for this age group

The published work consists of studies in typhoid fever by Coleman and Du Bois,[3] in malaria by Barr and Du Bois,[4] and in tuberculosis by McCann and Barr The unpublished work here presented consists of studies made by Coleman, Cecil, Barr and Du Bois in erysipelas,[6] arthritis[7] and the fever produced by intravenous injections of protein[8]

Comparisons with the normal were made according to the usual method of the Sage investigators, who consider that the normal metabolism for a given age

* From the Russell Sage Institute of Pathology in affiliation with the Second Medical Division of Bellevue Hospital and from the Department of Medicine of Cornell University Medical College
Read before the joint meeting of the Section on Practice of Medicine, the Section on Pharmacology and Therapeutics and the Section on Pathology and Physiology at the Seventy Second Annual Session of the American Medical Association Boston June 1921

1 Richter P F Fieber in Oppenheimers Handbuch der Biochemie

2 Barbour H S The Heat Regulating Mechanism of the Body Physiol Rev 1 295 1921

3 Coleman Warren and Du Bois E F Clinical Calorimetry Seventh Paper Calorimetric Observations on the Metabolism of Typhoid Patients With and Without Food Arch Int Med 15 887 (May) 1915

4 Barr D P and Du Bois E F Clinical Calorimetry Twenty Eighth Paper The Metabolism in Malarial Fever Arch Int Med 21 627 (May) 1918

5 McCann W S and Barr D P Clinical Calorimetry Twenty Ninth Paper The Metabolism in Tuberculosis Arch Int Med 26 663 (Dec.) 1920

6 Coleman Warren Barr D P and Du Bois E F Clinical Calorimetry Thirty Second Paper The Metabolism in Facial Erysipelas to be published

7 Barr D P Cecil R L and Du Bois E F Clinical Calorimetry, Thirtieth Paper Observations on the Metabolism in Arthritis to be published

8 Cecil R L Barr D P and Du Bois E F Clinical Calorimetry Thirty First Paper The Effect of the Injection of Foreign Protein on Metabolism to be published

and sex is proportional to the surface area[9] Practically all of the subjects studied were between 20 and 40 years old, and the standard used for this age was 39 5 calories per square meter per hour[10] If we express the matter graphically on a chart (Chart 1), we can show the curves for the predicted metabolism of normal individuals of different heights and weights If metabolism were proportional to height these lines would be horizontal, if proportional to weight, they would be vertical If proportional to surface area, they would have the slant shown in the curved solid lines of the chart, and our results do agree with these curved lines A purely statistical study of the normal basal metabolism by Harris and Benedict[11] has resulted in a height-weight-age formula With a little calculation we can show their results for men 30 years old on this chart It is significant that the dotted lines for the Harris-Benedict formula are parallel to the surface area curves

of from one to three hours at a given temperature level The normal temperatures were obtained in afebrile periods or in the first eight days of convalescence The diagonals are sketched to represent the direction of the swarms of dots It will be seen that in tuberculosis the diagonal crosses the 40 C line at a level of about 32 per cent above the normal In many of these patients there was enough undernutrition to account for a certain diminution in metabolism In erysipelas the metabolism is a little higher for the same temperature In typhoid fever, the line crosses the 40-degree level at 48 per cent above the normal metabolism In malaria and the fever following the intravenous injection of foreign protein, the metabolism is slightly higher Of course, it is necessary to leave out the shivering periods in these two conditions It is possible that some of the results in the high temperature following the chill are slightly affected by the previous severe muscular exercise

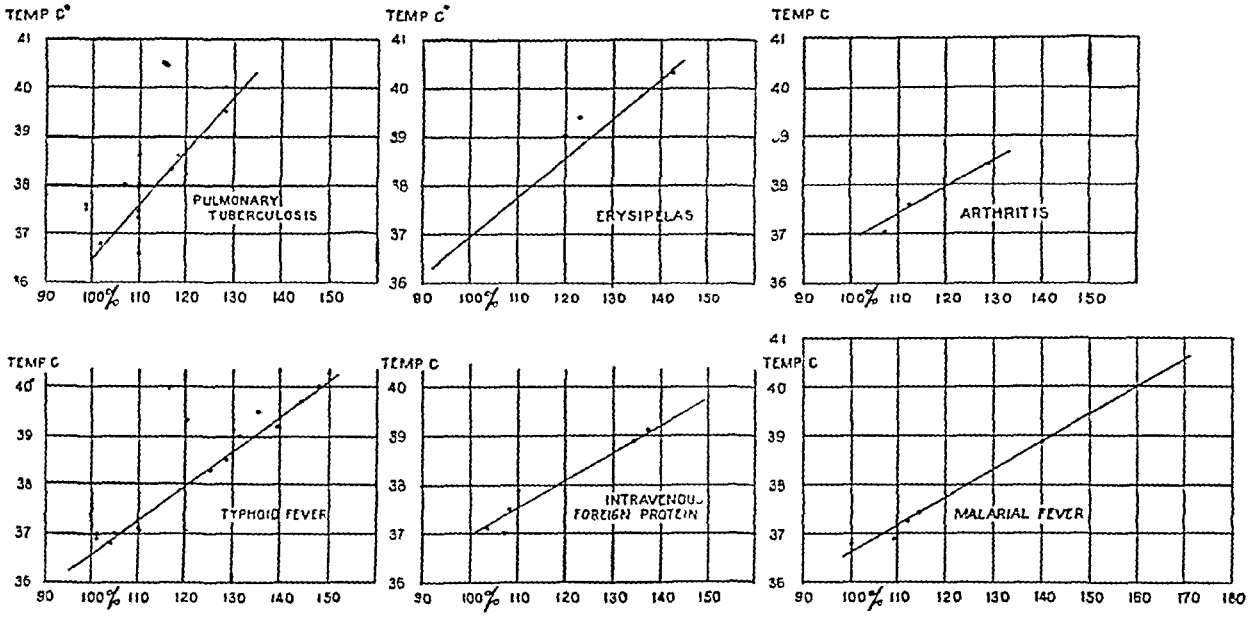

Chart 2.—Relationship of basal metabolism to temperature in various fevers Ordinates represent rectal temperance in degrees centigrade abscissas the metabolism expressed in percentages of the average normal e g 150 equals 50 per cent above the average Each dot represents a calorimeter experiment of from one to three hours at the given temperature

The studies of large groups of normal controls show that about 90 per cent of normal men come within 10 per cent of this standard, but a few who are apparently normal may show figures as much as 15 per cent above or below

Can we predict the metabolism as closely as this for any specified degree of fever?

Chart 2 shows the results in all the fevers studied in the calorimeter, expressed by the method used by McCann and Barr in tuberculosis The ordinates show the rectal temperature in degrees Centigrade The abscissas show the level of the metabolism in percentage of the average normal The line 90 means 10 per cent below the average, 150 means 50 per cent above the average Each dot denotes an experiment

Most of the patients whose metabolism is very high for the degree of temperature were typhoid or malaria patients with a high level of protein metabolism Most of those with low basal metabolism were tuberculous patients with low protein metabolism We know that protein increases the metabolism through its specific dynamic action, and this may explain the difference between the groups of patients The ingestion of a large protein meal does not increase the heat production in typhoid fever, in which the protein metabolism is already high, but it does cause a striking increase in tuberculosis, in which the protein metabolism is at a much lower level Although the increased protein metabolism seems to be a factor of some importance, we believe that it is outweighed by another and simpler factor

We note particularly the similarity between fevers of greatly different origins such as typhoid and erysipelas, malaria and intravenous injections We are impressed by the importance of the nonspecific element in fevers This is even more striking, if we group all the hetero-

9 Du Bois Delafield and Du Bois E F Clinical Calorimetry Tenth Paper, A Formula to Estimate the Approximate Surface Area if Height and Weight be Known Arch Int Med **17** 863 (June) 1916

10 Aub J C and Du Bois E F Clinical Calorimetry Nineteenth Paper The Basal Metabolism of Old Men Arch Int Med **19** 823 (May) 1917

11 Harris J A., and Benedict F G A Biometric Study of Basal Metabolism in Man Publication 279 Carnegie Institution of Washington 1919

geneous fevers in one chart (Chart 3) The continued diagonal line is here drawn from statistical calculations, and the dotted lines are placed to represent divergences of 10 per cent from this average Out of the total of 137 experiments in various fevers, 82 per cent come within 10 per cent of the average In other words, the percentage variations in the metabolism for a given temperature are scarcely greater than in a similar group of normal individuals

This surprising uniformity of results suggests at once that we are dealing with the law of physical

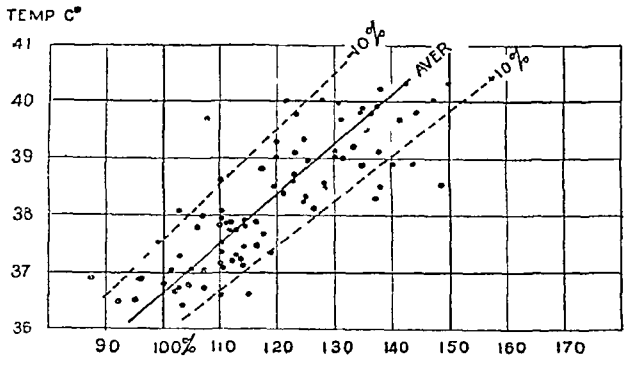

Chart 3 —Results in six different fevers grouped in one chart The continued line shows the average and the dotted lines are drawn to represent metabolism 10 per cent above and 10 per cent below the average

chemistry enunciated by van't Hoff [12] For ordinary temperatures the van't Hoff law can be thus expressed "With a rise in temperature of 10 degrees Centigrade the velocity of chemical reactions increases between two and three times" In other words the temperature coefficient is usually between 2 and 3 This means an increase of from 30 to 60 per cent for the 3 degree rise from 37 to 40 C Practically all of the fever experiments are within these limits and the average line shows a temperature coefficient of 2 3

Van't Hoff and Kanitz [13] give the temperature coefficients which show the rate of increase in a number of chemical reactions with an equal rise in temperature If we plot these in exactly the style of the fever patients (Chart 4) we note that the lines have approximately the same slope In other words, the reactions in a fever patient respond to a rise in temperature in a manner which resembles closely the chemical reactions in a test tube suspended in a water bath

There is a tremendous gap between the simple reactions in the test tube and the complex oxidations in the diseased human body, and we should hesitate to compare them were it not for the large number of biologic reactions which show temperature coefficients between 2 and 3 Van't Hoff calls attention to the rate of carbon dioxid elimination in plants, which shows a coefficient of 2 5 Kanitz [13] gives a long list of similar coefficients for plant respiration, rate of isolated hearts, contraction of smooth muscle and the metabolism in cold blooded animals

We have seen that the gross results in different fevers are strikingly similar It is interesting to note the similarity in the details of the mechanism of the rise and fall of temperature in the chills of malaria and those which follow the intravenous injection of foreign protein The first curve (Chart 5) shows the results obtained in a malaria patient by Dr David P Barr and myself Before the chill the metabolism and temperature were normal In the period of the thirty-four minute chill there was terrific shivering, and as a result the heat production rose to 216 per cent above normal After the chill the metabolism was increased by the hyperthermia, and then fell gradually as the temperature became lower The chill was accompanied by no change in the heat elimination The old idea that the rise in temperature is largely caused by a decreased elimination has been proved false The rise is due to the increased heat production, and this is caused in part by shivering and in part by some chemical regulation, the nature of which is still in doubt

After the temperature has reached its zenith, the elimination must, of course, exceed the heat production

The curve of the rectal temperature does not always parallel the curve for the changes in the average body temperature We shall never know the exact level of the average body temperature, because we cannot place thermometers all over the extremities and in the viscera, but if we know the differences between heat production and heat elimination, we can calculate how many calories have been stored in or lost from the body, using the method devised by Barr [4] If we start the average temperature curve half a degree below that of the rectal temperature, we can then follow its changes Apparently the region whose temperature is measured by a thermometer deep in the rectum shows a more rapid rise than the whole body, with its large mass of tissue near the surface and in the extremities

The curve of the arthritic patient who was given an intravenous dose of 35 million dead typhoid bacilli is almost identical with that of the malaria patient (Chart 6)

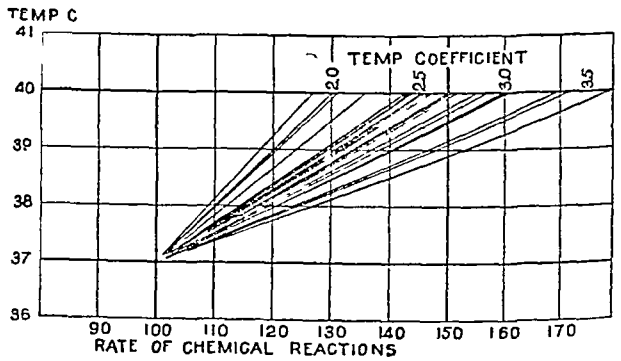

Chart 4 —The lines in this chart represent a number of typical chemical reactions taken from van't Hoff and Kanitz The slant of the lines shows the increase in the rate of the reactions as the temperature is raised Note that the lines correspond closely to those which represent the total oxidations in the human body

A study of the respiratory quotients in various fevers indicates that there are no significant changes in the metabolism of fat and carbohydrate Protein metabolism is high in fevers, and the protein minimum or "wear and tear quota" cannot be reduced to the normal level This increase seems to be proportional to the toxemia, since it is excessive in patients seriously ill with typhoid and erysipelas, and comparatively insignificant in chronic tuberculous patients with the same degree of fever

Balcar, Sansum and Woodyatt have produced excessive fever in dogs by depleting the water reserves

12 Van't Hoff J H Studies in Chemical Dynamics Revised by J Cohen Translated by T Ewan Easton Pa Chemical Publishing Company 1896

13 Kanitz A Temperatur und Lebensvorgange in Biochemie in Einzeldarstellungen Vol 1 Berlin Gebruder Borntraeger 1915

of the body, and they infer [14] that an abnormal water metabolism may be the cause of fever in man If this were the case, we should expect to find striking abnormalities in the total or percentage loss of heat through vaporization in febrile patients A careful scrutiny of the calorimeter results shows no such phenomenon The

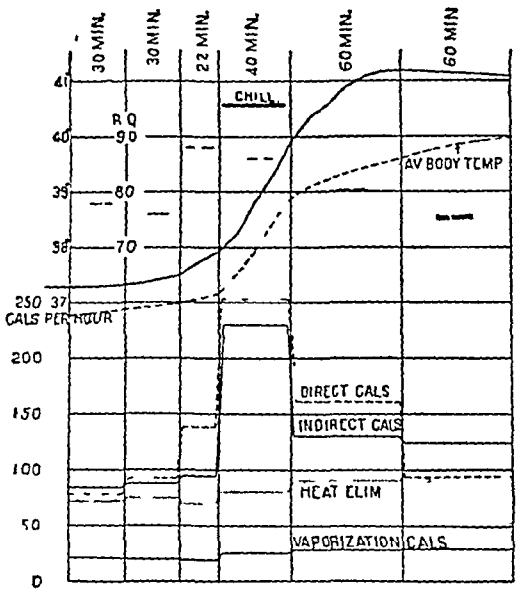

Chart 5.—Calorimeter results during a malarial paroxysm The upper continued curve shows the rectal temperature

water metabolism of fever patients corresponds closely with that of patients with an equal percentage rise in metabolism caused by hyperthyroidism

Let us now answer the original questions We can say that it is possible to estimate the basal metabolism of a patient by calculating his normal according to surface area standards To this we should add about 13 per cent for each degree Centigrade above the normal temperature (7 2 per cent for each degree Fahrenheit) This should be increased by 10 per cent in the case of toxic patients with great destruction of body protein and by approximately 10 per cent in all other febrile patients who are receiving much food A further allowance of from 10 to 30 per cent for muscular activity may be necessary if the patients are restless

It is interesting to note that our practical calculations in the clinic are based on the law of the conservation of energy, on the surface area law of Rubner, on the laws of the specific dynamic action of foods as formulated by Rubner and Lusk,[15] and on the temperature law of van't Hoff

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS PLUMMER, BENEDICT LUSK, BOOTHBY MEANS AND DU BOIS

DR. GEORGE W CRILE, Cleveland I wish to assent to the statement by Dr Boothby that the roentgen ray does not control exophthalmic goiter We have often seen great benefit following roentgen-ray treatment, with recrudescence as a rule At present we have no accurate and absolute basis for the classification of exophthalmic goiter I do not think that the classification may be based safely on the histologic study of the thyroid Usually it is impossible to make the classification by the variation in the basal metabolism rates I operate on quite a few patients who do not show alteration in the basal metabolic rate, and yet we secure good clinical results I think that the most important points are taking a careful history and making a careful physical examination After that the basal metabolism rate is of great importance but I would not regard it as being of pathognomonic importance nor would I classify exophthalmic goiter wholly on basal metabolism rates I was glad to hear Dr Boothby say that he does not think basal metabolism measurement would be a true guide for projecting a surgical operation We feel that the best guide, after all, is the judgment of the surgeon or physician For example, the basal metabolism rate will tell you what rate of expenditure the body is making, but it does not tell you how much reserve there is in the myocardium in the liver and in the central nervous system If surgery will avail itself of all its opportunities of minimizing to the utmost degree the impression made on the patient every patient will be operable.

DR. CHARLES H MAYO, Rochester, Minn After all, the importance of the subject relates mostly to chronic diseases and especially to diseases of the thyroid, in the changes of basal metabolism incident to normal, hypothyroid or hyperthyroid function Enough is now known concerning the thyroid its function and diseases so that in severe types of hyperthyroidism basal metabolism determination while not the sole indicator of severity, is of importance considered with the symptoms Without it psychoneurosis, in which the Goetsch or epinephrin test shows a low stability of the nervous system altogether too variable a test for much dependence in the analysis of exophthalmic goiter might be classified in the category of hyperthyroidism

DR JOSEPH AUB Boston We are just completing some work in our laboratory to see whether the tremor of hyperthyroidism or the tonus of the muscles could be the cause of the increased metabolic rate The work was done on cats Their normal metabolism was first determined Thyroxin was then injected intravenously and intramuscularly and the effect watched by following the metabolic rate When well

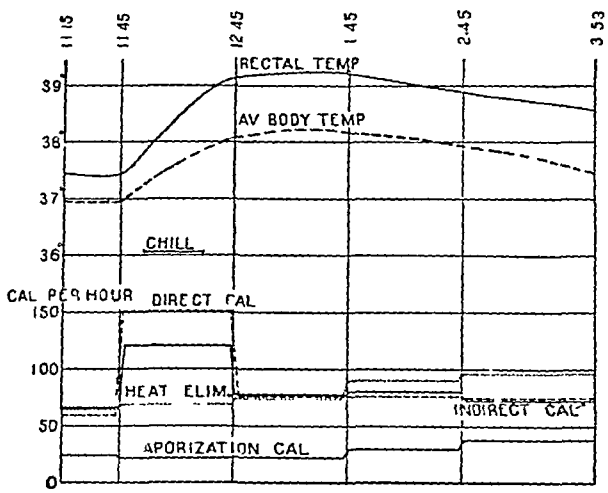

Chart 6.—Calorimeter results following the intravenous injection of 5 million dead typhoid bacilli The percentage rise in metabolism does not appear so great because the chill occupied only a portion of the period between 11 45 and 12 45

intoxicated the animals were anesthetized with urethane and their metabolism further studied Its level remained approximately the same, in spite of the fact that the tremor of the muscles was absent and the muscles felt flabby If later we cut all the nerves to the limbs, and so eliminated all tonus of these muscles, the metabolism did not return to its normal level Therefore the conclusion is suggested that muscular activity and tonus are not the main features in the high metabolism of hyperthyroidism and this work supports the view that the body cells themselves increase their usual basal rate of oxidation

[14] Balcar J O Sansum W D and Woodyatt R T Fever and the Water Reserve of the Body Arch Int. Med 24 116 (July) 1919

[15] Lusk Graham Science of Nutrition Philadelphia W B Saunders Company, 1919

DR FRITZ TALBOT, Boston It seems to me that true basal metabolism cannot be obtained in children under 10 years of age with the mouth and nose piece, but must be obtained in the respiratory chamber It surely cannot be obtained in children 6 years of age Consequently, I would give warning to draw no interpretations from findings obtained with apparatus using the nose and mouth piece, except in those children who have been thoroughly trained to the apparatus, so that there is no element of excitement, and those who can keep absolutely quiet The second point I would like to make is that the interpretation of results in childhood is fraught with more dangers than in the adult The reason is that childhood and infancy is the period of rapid change The standards to be used change accordingly and looking at the chart of the metabolism per unit of body surface you will see that there is a very marked change in metabolism during the first year and a half or two years of life Another point Malnutrition in infancy is quite different from malnutrition in the adult Two or three speakers have said that in malnutrition you expect a lowered basal metabolism The reverse is the truth in severe infantile malnutrition (infantile atrophy) The basal metabolism is above the average, sometimes 60 or more per cent Then, in regard to the subject that receives most attention, hypothyroidism and hyperthyroidism I have recently been able to study two infants, 3 months of age, who clinically were early cretins, one of them had a basal metabolism of minus 18 per cent, and the other had a normal basal metabolism One was in the state of hypothyroidism and the other was not Finally, it is generally assumed that at puberty there is no increase in the basal metabolism Two or three of Benedict's and my cases show an increase in the metabolism, and I have recently been studying selected girls from our outpatient department who at puberty have palpable thyroids The tendency of this selected group is to show a definitely increased metabolism

DR GRAHAM LUSK, New York I would ask Dr Boothby to withdraw the definition, "specific dynamic action" of thyroxin If the term came to be applied to such diseased conditions as manifest an increased heat production, the disturbances would then become "specific dynamic" diseases It seems that this definition, which was coined by Rubner to indicate the increased heat production after the administration of food, had best be restricted to the significance which it has already enjoyed for twenty years

DR FRANCIS G BENEDICT, Boston Probably no one has given more attention to the extraordinarily difficult problem of determining the average temperature of the human body than has Dr Du Bois I wonder whether the wholly remarkable correlation he finds between the temperature of the body and heat production is based on rectal temperatures or on the computed average temperatures It is easily seen that the cell activity would have to be considered on the basis of the average body temperature rather than the local rectal temperature

DR WALTER M BOOTHBY, Rochester, Minn We have found that Du Bois' basal metabolic rate standards of normality based on the law of surface area are exceedingly accurate and that the limit of normal variability is in a large majority of instances distinctly within plus or minus 10 per cent of his zero The consistency is exceedingly remarkable in a large series We have made more than 23,000 determinations, and we hardly ever find a case with an abnormal basal metabolic rate that does not have a reasonable clinical explanation In regard to what Dr Crile said, it is obvious that, if he includes in his operative statistics for exophthalmic goiter the cases with normal basal metabolic rates, this factor in addition to his beautiful technic, influences materially his mortality rate

DR JAMES H MEANS, Boston About the matter of body surface, the only thing I would like to say is that a study we have recently completed on the Du Bois, Benedict and Dreyer methods of judging of normality of basal metabolism shows that these three methods give almost identical results I am often asked which method should be used It does not matter The result will be essentially the same Dr Crile spoke about the roentgen-ray treatment of goiter, I do not want to go into the subject of treatment I do not want to say anything more now than what we have already said, which is that we believe that in certain cases there is more rapid improvement in clinical condition, and fall in rate of basal metabolism, pulse, etc, than one could expect as the result of spontaneous recovery Spontaneous recovery exists, as everybody knows The matter of recrudescence after roentgen-ray treatment has been mentioned There are recrudescences I have also seen recrudescences after surgery after fairly complete operations, so that I do not believe the fact that recrudescences occur after roentgen-ray treatment means that the treatment has no place In many cases it does no good, in others it does The production of myxedema is the best possible proof that it may quiet the thyroid It is easy to correct myxedema so arising by giving a little thyroid As a matter of fact, in the cases we have seen the myxedema is transient, as I showed in one chart I have seen several cases of myxedema following surgery

DR EUGENE F DU BOIS, New York Dr Benedict has sounded a much needed note of warning in stating that the simplification of technic has not simplified the understanding of the subject of basal metabolism or the interpretation of clinical results Time saved by the modern technical improvements should be devoted to the study of textbooks on nutrition As Dr Benedict suggests, the increase in the metabolism in fever should follow the curve for the average body temperature rather than the rectal temperature Practically, there is little difference between these two curves, except during sudden fluctuations Furthermore, we are unable to determine the actual level of the average body temperature, and it is therefore necessary to use rectal readings The manner in which the metabolism in fever follows the laws which govern the rate of chemical reactions lends support to the adoption of the term "metabolic rate" introduced by Dr Plummer

DR J EARL ELSE, Portland, Ore During the last year and a half, I have been making a correlated study of the basal metabolic rate, pathologic findings, and clinical manifestations in toxic goiter I have recently reviewed those cases in which the findings did not coincide and have classified them into three different groups In the first group are the errors in diagnosis The patients had small goiters, with symptoms similar to those of mild toxic goiter and a normal basal metabolic rate These patients had other lesions, such as an early tuberculosis, or chronic infected tonsils, which produced the symptoms I wish to take exception to the statement of Dr Means relative to the value of basal metabolic studies In the borderline cases, the basal metabolic rate is very important in diagnosis The second group includes cases of toxic goiter in the stage of remission Clinically, the patients show evidences of toxic goiter because as has been shown experimentally, symptoms are present for a considerable period of time after the injection of thyroxin, while the basal metabolic rate remains elevated only for a comparatively short period of time The third group includes cases of toxic goiter in which recovery has occurred so far as the thyroid and the excess secretion of thyroxin are concerned, but, on account of the patient having received an excessive amount of thyroxin over a long period of time, permanent lesions have been produced in the heart muscle, in the nervous system, behind the eyeball, and elsewhere, so that the patient still has a damaged heart, tremor and exophthalmos

DR A E ROUSELL, Philadelphia I disagree with the speaker who minimized the value of estimating the metabolic rate Many cases of hypotension are unrecognized Some of them with edema and the presence of albumin and casts in the urine, will necessitate the estimation of the basal metabolism for a correct diagnosis, just as the study of blood chemistry is necessary in various forms of nephritis The study of basal metabolism is an important adjunct to the practice of medicine, as are other methods of precision and, just like these other methods of precision, it has its limitations I have been particularly interested in the fact of the decrease of the metabolic rate under the use of the roentgen ray I have reported the marked improvement and cures that have existed for as long a period as four or five years

in cases of toxic goiter treated by intensive doses of roentgen rays Probably the lighter doses produce just the opposite effect Here the question is to produce necrosis, as one speaker represented the fact of producing myxedema is the best expression of the fact that the roentgen-ray treatment of toxic goiter is of extreme practical value

DR. HENRY S PLUMMER, Rochester Minn The papers on this program were not supposed to deal with therapeutics The authors have touched on the effects of roentgen-ray treatment, the excision of the thyroid, and they have discussed some of the relations of basal metabolism to fever and their application in clinical medicine However, this was done largely from the point of view of basal metabolism, and it seems desirable to avoid diverging into the subject of the relative merits of therapeutic measures in the treatment of goiter It is the obligation of every one interested in thyroid surgery to avoid the error of accepting basal metabolism as an index of the operability of the patient It is the status of the patient relative to basal metabolism that is of much significance in determining operability in a case. It is the most fundamental measurement of the patient's condition We have never seen in the thyroids of pregnancy and adolescence any evidence of the diffuse hypertrophy of the degree that is present in exophthalmic goiter and sometimes in the thyroids of laboratory animals It seems probable that there is a relatively high rate of exhaustion of thyroxin during pregnancy and adolescence Accepting this a slight elevation of the basal metabolism during the period of pregnancy and adolescence if present does not necessarily indicate an elevation in the amount of thyroxin in the tissues While it is possible that there are some other hyperthyroid states we have not absolutely definite knowledge of any except that which follows the administration of thyroxin and those associated with adenomatous thyroids and exophthalmic goiter The conservative stand at present is to assume that an individual having a normal basal metabolism is neither hypothyroid nor hyperthyroid There is considerable evidence to suggest that there is rarely a short phase at the beginning during the course of the disease or following thyroidectomy for exophthalmic goiter in which the basal metabolism is normal and a syndrome attributable to a perversion of the thyroid secretion is present If true we have no reason to believe that it often involves the question of differential diagnosis in cases in which the syndrome suggests hyperthyroidism, but in which the basal metabolism is normal We have seen a large number of patients having relatively little complaint, no definite pathologic findings, and a basal metabolism ranging from 10 to 15 per cent A study of this group indicates that these cases although we cannot definitely classify many of them cannot be considered up to the normal standard physiologically

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Early Diagnosis of Lead Poisoning—Since systematic examination of the blood for granulated erythrocytes has been introduced to detect lead poisoning in its incipiency the amount paid out for disability on this account has dropped from 133 439 to 5,143 marks in the Leipzig krankenkasse For nearly two years there has been no claim for disability from this cause J Schoenfeld in the *Zentralblatt für Gewerbehygiene* 9 3 1921 says that he regards as positive even less than 100 granulated erythrocytes per million As the proportion grows larger or smaller the course of the lead poisoning can be estimated The certainty afforded by this blood index reassures the workmen, and gives a basis for enforcement of protecting devices dustless paints etc. With the exception of the band for hematoporphyrin in the urine all other signs of lead poisoning he adds, are not pathognomonic, or only accompany irreparable damage A conference of physicians connected with German factories making lead paints was held recently at Halle Among the problems proposed for further study were whether the absorption of lead could be prevented by ingestion of charcoal, kaolin or thick gruels, and whether laxatives gardening and other physical work aid in evacuation of the lead The speakers were unanimous in saying that the blood and urine tests had removed the danger from lead poisoning reducing it to a question of mere cleanliness

IN WHAT CASES DO UTERINE FIBROIDS STILL REQUIRE OPERATIVE REMOVAL?*

FRED J TAUSSIG, M D
ST LOUIS

In four of the most important fields of gynecologic work, cancer of the uterus, fibroids of the uterus inflammatory disease of the adnexa and disorders of menstruation, the last five years have witnessed a remarkable trend away from operative procedures So pronounced has been this tendency that before long the general surgeon may leave us to our own resources particularly if gynecologists cease to poach on the domains of their fellow surgeons It may well lead to the better definition of gynecology as a specialty, which is the more needed because of the way in which many of our best universities have separated it from its twin sister obstetrics It is well, however, to hold a rein on our enthusiasm, lest the current of nonoperative treatment carry us too far in the opposite direction I have, therefore, felt it pertinent to analyze from our present experience the indications for treatment in one of these fields, uterine fibroids The basis for my opinions is (1) a study of personal experiences during the last three years, during which time I have had radium available for treatment, and (2) a review of the numerous reports on this subject from clinics here and abroad

TABLE 1—INDICATIONS AND RESULTS OF TREATMENT IN OPERATIVE CASES

			Indication for Operation							Results		
	Number	Average Age	Size	Pus tube	Ovarian Cysts	Prolapse	Desired Children	Operation Preferred	Other Reasons	Good	Phlebitis	Death
White	24	41.9	4	1	1	4	3	3	8	22	2	0
Colored	63	35	35	12 (5)	6 (2)	1	0	0	9	60	0	3
Total	87	38	39	13	7	5	3	3	17	82	2	3

COMPARISON OF RESULTS FOLLOWING TREATMENT BY OPERATION AND RADIUM

Since January, 1918, I have treated, either by operation or with radium, 123 cases of uterine fibroids A considerable number of additional cases were seen by me during this time, but either these patients did not require treatment or refused it for one reason or another Of the 123 patients eighty-seven were operated on and thirty-six were given radium treatment The analysis of indications and the results of treatment can best be shown in the accompanying tables So far as I know, no one has heretofore attempted to differentiate therapeutic indications according to race Certain striking differences between the negro and the white race are manifest It will be noted that while only five out of sixty-eight negro women were found suitable for radium treatment (7 3 per cent) the proportion among the white was thirty-one out of fifty-five (or 56 per cent)

In explanation of these tables it should be stated that when a tumor was large enough to extend more than half way between the symphysis and the umbilicus,

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Read before the Section on Obstetrics Gynecology and Abdominal Surgery at the Seventy Second Annual Session of the American Medical Association Boston June, 1921

operation was advised, provided no contraindications, such as serious heart or kidney complications, existed The bracketed figures under pyosalpinx and ovarian cyst mean that the condition existed in addition to the size of the tumor to justify operative removal Under the head of "other reasons" in the operative group were included carcinoma of the cervix, 2 cases, submucous fibroid in vagina, 3, intraligamentous fibroid, 2, ectopic pregnancy, 2, pregnancy, 1, appendicitis, 1, wrong diagnosis, 1, tuberculous peritonitis, 1 In one case with mild hyperthyroid symptoms, I desired to avoid the castrating effect of radium and hence preferred a subtotal hysterectomy

In the thirty-six radium cases, the dosage ranged from 800 to 1,750 mg hours, with an average of 1,250 mg hours Usually 75 mg hours were applied within the uterus in silver and brass for about sixteen hours In three instances of somewhat larger growths, roentgen ray was used in addition to radium, but in one of these, the menorrhagia still persisted and the patient decided to be operated on In ten patients the radium was applied in the vaginal fornix instead of intrauterine Additional treatment was given in but one case As to amenorrhea the rule was that in patients over 40, no further menstrual flow occurred after radiation, whereas in younger patients one or two periods occurred before cessation of flow In some

TABLE 2.—INDICATIONS AND RESULTS OF TREATMENT IN RADIUM CASES

			Indications for Radium		Results		
	Number	Average Age	Size	Operation Contra Indicated	Good	Complications	Failure
White	31	42 5	29	2	28	2	1
Colored	5	39 0	3	2	4	0	1
Total	36	41 5	32	4	32	2	2

of these younger persons, menstruation returned in from six months to a year, but was not excessive in amount In three instances the flow never ceased but became normal in amount Excessive bleeding was not the only symptom that justified treatment Backache and pressure against the rectum were, in two instances, greatly relieved by the marked diminution in the size of the tumor The diminution in the size of the tumor continued for several months after the original treatment In this respect, the reaction of fibroids to radiation has a certain similarity to that of keloids in which a slowly progressive absorption has been noted for long periods of time

One of the outstanding contrasts in these two tables is the frequency of complications in fibroids among colored women This is due in part to the greater frequency of gonorrheal infection but also to the inherently earlier appearance and more rapid growth of fibroids in the negro race I do not think this point has been sufficiently emphasized, though doubtless all gynecologists living in Southern states will bear witness to this fact The age incidence in my series was more than six years less in the negress than in the white woman, and yet in spite of this fact large tumors reaching to the umbilicus, or above it, were about nine times as frequent among the colored as among the white race These large tumors, particularly when associated with infected tubes, often affected the heart and kidney function, and their removal was attended with great technical difficulty resulting in a relatively high mortality (4 7 per cent) At the St Louis Negro City Hospital, we have occasion to see many women die without being operated on as a result of fibroids or complications produced by fibroids When we consider how rarely we find a white women in whom fibroids have caused death, we must agree that the condition is a far more serious one in the negro race, and that palliative measures will only rarely be suitable for this group

In one respect, however, the operative treatment of fibroids among white women presents greater danger This is in the complication with thrombophlebitis While I have not time to look up definite statistics on my fibroid cases in which operation was performed previous to 1918 I do not recall a single instance of thrombophlebitis in about 300 colored women operated on for fibroid during the last fifteen years Among white patients the incidence of this troublesome complication is about one in every twenty or thirty cases In Hornung's [1] recent analysis of the cases at Kiel, thrombophlebitis occurred fourteen times in 447 operations, about 3 per cent In my own series, it occurred twice in twenty-four operations This is to my mind an important additional reason for preferring radiation to operation in white women At present, we have no way of preventing these unfortunate thromboses, and assuredly they are the bugbear of all gynecologists With radiotherapy we do not have to fear this trouble

From a practical standpoint we are constantly brought face to face with human fears and prejudices The dread of the knife has in the past kept many patients from consulting a physician, or, after they have consulted him, it has made them put off treatment month after month How often have we all heard the story, "Yes, doctor, I noticed the lump about six months ago, but I thought it would go away, and I knew you would say I should have to be operated on" If it is true concerning cancer that "in the early recognition and treatment lies the *hope* of cure," it is well to emphasize to our patients that in the case of fibroids "in the early recognition and treatment lies the *case* of cure" It seems to me that already among the more educated classes this knowledge of other methods of treating fibroids besides surgery has permeated and has led more patients to come promptly for the relief of symptoms Certain it is that many of my patients would have refused operation but did not object to the simpler, safer and usually equally effective treatment with radium I should not be surprised if, in the course of the next decade, among white women, the percentage of cases in which radium was sufficient to effect a cure would increase from the present 40 to 50 per cent to almost 80 or 90 per cent

As to the expectancy of cure after radium or roentgen-ray treatment my own experience is too recent to justify any statement but there are ample reports from current literature [2] on this point Zweifel, 222 fibroids, Clark, 150, Kupferberg, 325, Kelly, 182, Steiger, 59, Weibel, 53, Clarke, 50, Brettauer, 32, Miller, 26 These men using radiotherapy, either in the form of roentgen ray or radium, attained a symptomatic cure in all but forty-eight out of these 1,099 cases of fibroids This would make a percentage of cure of 95 5 per cent, assuredly a sufficient justification for the more extensive adoption of this form of treatment

1 Hornung R Zentralbl f Gynak 45 381 389 1921
2 Gellhorn G Am J Obst & Gynec 1 767 1921 Detailed references to recent literature under this head

CONTRAINDICATIONS TO RADIOTHERAPY

And now let me briefly state the contraindications at present existing to radiotherapy

1 *Size*.—When the mass of the fibroid uterus is more than 12 cm in its average diameter, operation is usually to be preferred I think it better to employ this form of description rather than the distance of the tumor above the symphysis, since a relatively small uterus may be situated high and reach almost to the navel whereas a large fibroid filling the whole pelvis may barely be felt from above

2 *Location*.—Submucous fibroids protruding through the cervix subserous fibroids of considerable size with a definite pedicle, cervical fibroids and intraligamentous fibroids had better be operated on I do not, however agree with Zweifel in excluding fibroids that are merely pressing against the rectum or bladder provided they are not already partly wedged into the pelvis In several instances, I have seen such pressure symptoms completely disappear after the shrinkage produced by radiation

3 *Degeneration*.—Rapidly growing tumors, calcified fibroids, necrotic fibroids and those complicated with malignancy are not suitable for radiation

4 *Age*.—There is no absolute contraindication to radiation on account of age except so far as the desire for children or a preservation of menstruation makes myomectomy or subtotal removal of the body of the uterus preferable

5 *Complications*.—Pyosalpinx and ovarian cysts except small retention cysts, are a positive contraindication in my opinion Often we encounter difficulty in differentiating between a laterally situated fibroid that is somewhat adherent and an adnexal mass It is well not to be in too great a hurry In those cases in which there is still reasonable doubt, I would prefer operation to radiation, for it will take many more reports than those of Van de Velde [3] to convince me that radium treatment of pyosalpinx is anything more than a very dangerous experiment

Such in the main are the contraindications to radiation It is evident that only the careful diagnostician will be able to differentiate between the cases that are suitable for operation and those that are suitable for radiation It is, therefore, greatly to be deplored if the general practitioner should, without further consultation, send all his fibroid patients to the roentgenologist for treatment, or even worse, if the roentgenologist should undertake the treatment of fibroids with roentgen ray before a careful pelvic examination by some competent person has been made

As to the use of the roentgen ray in fibroid cases, I cannot speak from personal experience but from what I have seen of the cases treated by others with roentgen ray I must share Clark's [4] decided preference for the intra-uterine application of radium in these cases Radium may cause leukorrhea for a period of time, but it does not produce the pronounced intestinal derangements (vomiting, cramping, catarrhal stools) that so often follow roentgen-ray treatment Furthermore, it seems to be more certain in its results In two of my cases, roentgen ray in the hands of competent men had failed to produce amenorrhea, while a single application of radium promptly brought about the desired result The diagnostic curettement which should always attend a radiation for fibroid makes the intra-uterine application of radium a simple therapeutic measure

CONCLUSIONS

Let me, in conclusion, emphasize these points Radiotherapy of fibroid tumors is destined more and more to displace operation as patients learn to come early before contraindications to its use have arisen In the negress, however, surgery will still have to be generally employed in fibroid tumors on account of their earlier, more rapid and more complicated development Radiotherapy is a measure that has definite contraindications and the selection of cases suitable for such treatment should remain in the hands of the trained gynecologist

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ABSTRACT OF DISCUSSION

DR GEORGE GRAY WARD JR, New York The use of radium in fibroids is a method of great value, but we should appreciate the limitations We shall now get these cases very much earlier Fear of the knife will not keep these patients away And as we get them earlier they will consequently be more frequently in the child-bearing age, and the question of sterility will be a very important factor to bear in mind Therefore the operation of myomectomy must not be forgotten as probably the most valuable method for use in child bearing women who have fibroids Radium has increased the importance of the operation of myomectomy Formerly we feared overlooking a fibroid so small as not to be visible at operation but which might later cause trouble Now we need not fear this because we have radium to fall back on should a tumor subsequently develop Therefore there would be no need of a second operation We have also found radium of value in large fibroid tumors associated with severe hemorrhages, producing a marked anemia so that the cases were not suitable for operation on account of the grave risk to life In these cases we have used a preliminary application of radium to check the hemorrhage and allow the patient to build up and therefore become a better operable risk. We have used radium in the form of a tandem application in these cases, that is, two tubes are placed, one above the other, so as to irradiate a larger surface In the case of large fibroids we use 1 500 mg and in the cases of young women when we do not wish to cause cessation of menstruation, we have used from 200 to 500 mg hours according to the size and conditions I wish to call attention to two important dangers If the bladder is allowed to become markedly distended during irradiation on account of its proximity to a small uterus it will be affected through the uterine wall, and necropsy has shown that if the intestine is adherent to a small uterus irradiation caused a burn of the intestine which produced ulceration and death

DR WILLIAM J MAYO Rochester, Minn Radium treatment is not conservative It is quite as destructive as operation and sometimes more so because it destroys the function of the ovaries as well as that of the uterus If hysterectomy is performed, one or both ovaries can be saved in 50 per cent of the cases I agree with Dr Taussig in his limitations on hysterectomy Radium can be used in a large number of cases of the type in which hysterectomy has been thought necessary But the desirability for continuation of the function of menstruation in young women must be considered especially in young women who desire motherhood If enough radium is used to cause shrinkage in tumors of considerable size, it is just as destructive as hysterectomy, or even more so It has been urged against myomectomy that it is more dangerous than hysterectomy Some years ago I looked up the records of 741 cases in which myomectomy had been performed in the clinic and

3 Van de Velde T H Zentralbl f Gynak 44 994 (Sept 4) 1920

4 Clark J G The Treatment of Myoma Uteri with Radium J A M A 73 957 (Sept 27) 1919

found that the average mortality had been less than 1 per cent Six hundred and nineteen of these myomectomies were abdominal, with only 0 6 per cent mortality The remainder were vaginal myomectomies with a little over 2 per cent mortality About half these patients were married Twenty-one had raised one child each, and seven had raised two or more children Fourteen of these patients were pregnant at the time of operation, eleven went to term and bore living children The disturbance which occurs in fibroid tumors in women who are pregnant is usually due to changes in the circulation, and the operation is comparatively easy in these cases Premature expulsion of the fetus occurred in but three of the fourteen cases, and none died Only nineteen of the myomectomized patients had second operations, some of which were performed a number of years afterward In the meantime, several of the women had borne children Most of the second operations were for infections Myomectomy is the operation of choice for fibroids in women under 35 or 40 Hysterectomy is best for women over 50 if there is a suspicion of malignancy, and for women having large tumors Radium has a great field of usefulness for smaller tumors that cause hemorrhage at the menopause period

DR HENRY O MARCY, Boston At the International Medical Congress in Washington, in 1887, this subject was discussed with extreme care I rather reluctantly felt obliged to ask Apostoli of Paris to come over and give his address on the application of electricity I had been prejudiced against his method, perhaps unjustly, because Dr Ephraim Cutter had devised a method somewhat similar, except that he thrust one pole into the large tumor through the abdominal wall and then applied this high current into the uterus Apostoli had his application diffused through a water pad Dr Keith of Edinburgh had removed seventy-two large uterine myomas without a single death He said, "I am sure we will see no more operations for the removal of fibroid tumors" Apostoli has settled the problem, and the curability is absolute, with entire safety I asked Apostoli to come to my hospital here and apply the method He did it I was convinced I must be wrong I purchased the apparatus and made 600 applications with the greatest of care, measuring the current and the time, and every patient insisted on it that she was a great deal improved I did not find a single case in which I thought there was the slightest benefit, except in the hemorrhagic condition of the intrauterine type This history shows a direct effect of the mind, of the patient's nervous system, on the up-to-date cure I wish you would consider this in reference to the effect of radium treatment It was almost exactly the same in its application with that of Apostoli He has been forgotten, except in an historical sense We are placing too much importance on the application of radium I have sent a number of patients to experts without benefit I have had serious criticisms on the results I do believe that while radium is still in the experimental state we must not expect too much from its results Fortunately its high cost tends to keep it in the hands of only a few experts It must be used with care

DR FREDERICK J TAUSSIG, St Louis In fibroids of the uterus we can establish a routine that is in contradistinction to what I said as to the treatment of cancer I think the treatment of fibroids of the uterus with radium can very well be extended to any person qualified to make a gynecologic diagnosis As to myomectomy, I quite agree with Drs Ward and Mayo regarding its value in younger persons Yet, let me call your attention to the figures in my tables showing that in those cases that were suitable for radium, in other words, fibroids that were within the pelvis, in white women the age incidence was 42½ years In other words, there are relatively very few of these cases in which we can seriously consider an operation for the preservation of the function of conception As to the incidence of thrombophlebitis I have spoken with a number of my colleagues from the South and their general impression is the same as mine namely that the incidence of thrombophlebitis among colored people is relatively very low However, I trust that further information will come when more extensive statistics are available

"WAR" NEUROSES AND ALLIED CONDITIONS IN EX-SERVICE MEN

AS OBSERVED IN THE UNITED STATES PUBLIC HEALTH SERVICE HOSPITALS FOR PSYCHONEUROTICS *

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At this time, more than two years after the cessation of the hostilities of the great war, the term "war" neurosis is virtually obsolete Only occasionally are there now received for treatment cases presenting a "War" neurosis syndrome, and such as are received may be attributed to an attenuation and fixation of former symptoms The symptom-picture today, then, is principally a neurosis occurring in ex-service men In a large number of cases actual warfare would seem to have comparatively little to do with the production of the neurosis—the actual war experiences being less influential in the production of the present train of symptoms than the environment and the demands outside of camp life, which are further nurtured by response to the influence of the spirit of the times This relates to the personal equation of each individual, and the degree of expression of symptoms has little to do with the severity of the actual war experience but is in direct proportion to the interpretation of that experience by the individual Hence, a soldier whose total army life and experience consisted of one night in camp and ninety days in a hospital presents a more hopeless picture than many a full-fledged veteran of two or three years of most varied and arduous war experience It is, therefore, the patient's conception of the situation and his attitude of mind toward that situation that develops the emotion which determines his reaction

This is consistent with normal humanity The abnormal is only an expression of hypo-emotivity or hyper-emotivity generating reactivity Mental stability, including apperception, judgment and decision as psychologic factors, is a criterion for the distinction of the two states We have, then, presented at this time a neurosis thoroughly commensurate with the neuroses

* Read before the Section on Nervous and Mental Diseases at the Seventy Second Annual Session of the American Medical Association Boston June 1921

* To this date the U S Public Health Service has maintained only two hospitals (No 42 at Perryville Md and No 37 at Waukesha Wis) principally or solely for the care of psychoneurotics Since the author's observations were made mainly at one of these a few remarks for purposes of orientation are in place U S Public Health Service Hospital No 37 situated at Waukesha Wis to the best of my knowledge holds the distinction of being the first institution devoted solely to the care and the treatment of the psychoneuroses The institution was formerly a hotel sanatorium known as 'Resthaven' and was built some ten years ago at an expense of about half a million dollars In 1919 it was acquired by the government which since then has planned and is now executing extensive alterations to the end of making it a model of its kind The plant when completed is expected to represent all that is most desirable and advantageous as suggested and accepted generally as adequate in the care the treatment and the rehabilitation of the psychoneurotic The contemplated total capacity of the hospital is 300 beds Among its general assets it enumerates a fully modernized clinical laboratory including studies in blood chemistry and basal metabolism a thoroughly equipped roentgen ray department and an active dental section Among its special assets are numbered an electrocardiographic station a speech clinic presided over by an experienced specialist in speech defects a resident psychologist and thorough going rehabilitation adjuncts The reconstruction work includes a quite uniquely equipped physiotherapy department with its various subdivisions a progressive occupational therapy department and an alert representation of the Federal Board for Vocational Training The Red Cross is distinctively represented in its psychiatric case workers and its recreational activities Furthermore the hospital has the fortunate advantage of six attending specialists in the professional fields of surgery cardiovascular diseases urology, orthopedics eye ear nose and throat and speech defects

of civil life, being precipitated perhaps a little more quickly by virtue of certain sentimental conditions previous to going overseas, occasionally with additional violence and actual warfare at or near the battle-fields abroad, and the excessive sentimental conditions persisting since having returned to home ties These conditions perhaps, influence the patient further by furnishing him a seemingly legitimate excuse for the state which he finds himself in, the productive elements of which obtain the same as for a neurosis in civil life and are expressed by the formula of "pressure versus personal resistance" Patients with a persistence of the true war-syndrome usually respond to psychotherapeutic treatment readily, and hence their prognosis is ordinarily favorable under proper management Occasionally the immediate symptomatology of present-day cases gives certain reactions a self-engendered mild military coloring The reason for this is of course, obvious

The cases are grouped in this hospital under the headings included in the official nomenclature of the U S Public Health Service and are reported under the diagnosis decided on at the time of the patient's discharge from the hospital and not under the tentative diagnosis often applied at the time of the patient's admission The official nomenclature purposes the psychoneuroses to be classed under the terms psychasthenic type, neurasthenic type, hysterical type and the anxiety neuroses These types may exist more or less alone and uncomplicated, or complicated, with admixtures and concomitants of one or more types or with tendencies expressing a mild symptomatology in other directions They also frequently occur, of course in the presence of fundamental and coexisting organic conditions which may be mere factors in the case or true concomitants Thus, we recognize in one man a neurasthenia per se, in another a neurasthenia with mental subnormality, in another a neurasthenia with hypochondriacal tendencies, and in still another a neurasthenia with a chronic interstitial nephritis or other organic factors, and again a neurasthenia with coexisting organic conditions such as chronic tonsillitis, bronchitis, colitis or impaired sight Tension states of anticipation, timorousness and anxiety are usually symptomatic and concurrent residuals which have been carried over and in a few instances somewhat accentuated, but more frequently attenuated Inadequate personality traits and eccentricities are very common Psychopathies often appear as concomitants The effort syndrome, or so-called neurocirculatory asthenia appears occasionally—usually symptomatic and often associated with vague vagotonic manifestations Very occasionally the real effort syndrome is present apparently uncomplicated and so marked that even moderate exercise (ten knee stoops or fifty hops) will exhibit excessive exhaustion, dyspnea, cyanosis, tachycardia, excessive perspiration, etc This however, appears to occur only in individuals of a particular makeup, namely, that expressing subnormal organic capacity Real exhaustion is otherwise scarcely ever seen Syndrome and neurosis symptom-pictures of concussion and of gassing appear not infrequently in the personal histories of the patients thus far studied

Elements of malingering are often present and more or less persistent, usually in the form of subconscious or coconscious malingering which forms have been accepted as a normal reaction quite universal in young children and quite persistent in the simple minded for the reason that the child has not yet learned to bear with equanimity responsibilities which are to be a part of his normal relationship to society, whereas the simple minded has not the ability of such aquisition Many patients ordinarily classed as psychoneurotic present mental subnormalities from the dull normal type back to the high grade imbecile When such as these demonstrate elements of malingering, they are regarded as not being of the criminal type, even though they may otherwise present many delinquencies or possibly other criminal tendencies

PENSION NEUROSIS

An element, however, of pronounced importance and becoming continuously more noticeable is the presence of a recently acquired pension neurosis It now frequently expresses itself as the predominant factor in a symptom-picture complex This, again, can be regarded as the expected outgrowth of the recent spirit of the times So much has been said about compensation for the ex-service man, his care and rehabilitation that the individual with feelings of inadequacy or real inadequacies naturally gravitates in the direction in which relief from responsibilities and the stress of life has been promised or may be assured The heterogenous attempts on the part of welfare workers, however good their intentions, have unfortunately done much to foster that attitude In due deference to these workers, it must be remembered that many were without adequate experience and had little or no training at the time the United States declared war Consequently, and in keeping with the predominating impressions of the horrors of the European conflict, sympathy and sentiment was dispensed excessively and without adequate knowledge of its applicability to the individual soldier or the probable result of its leading to the production of certain stereotype states which are now afflicting a very large majority of the patients entering the hospitals of our country It is not at all a new aspect in human history It might be well maintained that the greater bulk of charitable endeavor by virtue of its being misconducted and misdirected grossly miscarries and not only utterly falls short of its intent but actually does damage This result can not be entirely obviated because we are dealing with human beings, and as such no one is infallible

Stimulated by the horrors of the World War, but without an adequate conception of the work that medical men are called on to accomplish and with little or no rational understanding of the choice or of the refinement of the methods to be used, public sentiment, as was to be expected, went far afield This is now very evident from the results in hundreds of individual cases While some are benefited, others remain entirely indifferent, and to each soldier accrues such results as his individual capacity is capable of, which may be good, bad or indifferent

Discipline is the keynote in the success of army life and yet the response to discipline to one man means loyalty, to another punishment, and there is no common ground between the two situations possible for either personality The adequate personality type of individual and the inadequate personality type of individual act and react entirely dissimilarly and quite opposed to each other many times under exactly the same stimuli, hence, the precipitation of dissimilar results in entirely similar situations And consequently a single standard of approach by these multiple wel-

fare agencies in their multiple activities, before, during and since the World War has resulted in both temporary benefit and lasting harm For instance

A recent patient admitted to this hospital for treatment after two years of continuous efficient work since his discharge from the army comes to the hospital apparently solely because he has just learned through a welfare organization, of his legalized privilege to become a beneficiary of the War Risk Insurance Act The patient is mildly neurotic congenitally but shows no other symptomatology and had been handling his problems satisfactorily since his discharge from the army

Let me cite another instance

B C, aged 21 with mental deficiency, enlisted, Aug 29, 1918, did not go overseas, and was discharged, May 26, 1919, at Camp McPherson, Ga Two days after being discharged he had reached home Two days later he had gone to work at his old job as "laborer," at which he continued for some fourteen successive months During that time he even added to his responsibility by becoming married Next he fell under the well meant influence of local welfare workers and was sent to this hospital, Aug 18, 1920, with the complaint "There is nothing wrong with me as I can see I eat pretty good—sleep fine—bowels all right—no headache—no pain—no one or nothing bothers me in any way" During the patient's residence in the hospital his wife gave birth to a son The patient was discharged from the hospital, September 13, after many personal requests for discharge A notation on the case reads "Patient is a typical good natured man without apparent vicious tendencies" Now, since his hospitalization we get numerous reports from the same welfare association which sent him to this hospital of his not being willing to work at all steadily, at times working very little failing to provide adequately for his wife and child, and continuously soliciting funds from the welfare organizations

This simply expresses, as I conceive it, the danger of a break in the continuity of lives susceptible to the adoption of deplorable habits of reaction This sort of break is more or less inevitable, perhaps, in most of the lives of such individuals, but usually comes later on at the age from 35 to 45, perhaps when the children of the family have grown to a self-supporting age, or are able to contribute to the general maintenance of the family, when the father quits and becomes more or less dependent, or at least resigns his responsibility

The recent rapid growth of pension neurosis as expressed by the patients in this service is remarkable—much more noticeable as time advances and we recede farther from the acute neurotic manifestations accredited to the effects of warfare In the vicious cycle occurs most assuredly a knowledge of the War Risk Insurance Act, which knowledge is being continuously more thoroughly disseminated among the ex-service men This neurosis obtains not only in the constitutional psychopathic inferior group but also in many others whose industrial efficiency and natural desire for work and the concurrent responsibilities of life have never been very high A large number of men whose industrial efficiency during all their industrial years has never exceeded $30 per month are naturally quite satisfied to enter a hospital of this type on a complaint of "nervousness" and "weakness" and that they "get dizzy," and thereby to remain and to draw $80 per month compensation together with board, room, multiple free entertainments and other considerations

Although these patients are conscious of overdoing their real physical infirmities they are not truly criminal malingerers because of their faulty understanding which makes them feel that such is their just due For this reason, or by virtue of their natural habit of oversublimating, many of them are so confident in that opinion that they insist that what is offered them by the government in return for their overestimated past military services is not good enough for them They will frankly tell you not only that the food is unpalatable and the beverages unpotable, but also that the hospital is an unendurable and inhospitable "joint," and even not infrequently add that the government should be ashamed to ask any ex-service man to come to such a place Yet, if you suggest that the hospital has probably done for them all that is possible and mention that their discharge is being considered, they will wire to their congressman in Washington, stating that they are being thrown out of the hospital because their doctor does not like them—or some equally flimsy excuse, and thereby start a commotion along the whole official line This, of course, represents the acts and the reactions of the inadequate personality type of individual whose apperception is faulty, who cannot see things as they are, and who cannot be persuaded to accept them as others see them nor to view them in the verifying light of experience, judgment and wisdom This represents the class of patients which one can scarcely do anything with or for, because of the intense fixation obtaining by virtue of the common tendencies prevailing in the uncritical makeup of him who believes the things which please him and rejects those which do not

OTHER NEUROSIS FACTORS

Perplexing situations often arise in the treatment and management of these cases Particular group conditions frequently exist In addition to the recently growing pension neurosis group, another group has been present and prominent continuously since the opening of this hospital The particular condition occurs among foreigners, especially Italians, Greeks, Austrians and Poles It is most pronounced in Italians, but in all the personal equation is very similar and so persistent that there is little chance for modification or correction One of the fundamentals of the condition seems to arise from a general belief that the United States is a very wealthy country and that its government is due and destined to provide for them for the rest of their lives These people are often unable to demonstrate any somatic maladies They do not show psychopathies in the usual sense of the word, but their attitude is so persistent and usually so consistently free from somatic factors that I frequently facetiously refer to these patients as sufferers of 'Italianitis"

We also have a similar composite which may be referred to as a "Red Cross neurosis"—not that I would make any criticism of the great work done by the American Red Cross, for it comes about as well through other welfare agencies and is produced by the desire of the ex-service man to avail himself of every opportunity that might enhance his welfare These patients too frequently have no pride—but a great deal of vanity They are willing to accept any assistance for which they need to expend no actual physical effort They believe in a divine right of assistance from the Red Cross and other welfare organizations, and will accept anything and everything from cigarets to a furnished flat, and to get these they are induced to overestimate their somatic symptoms and in some instances to manufacture them, but the influence of the spirit of the times on this man's personality makes

him feel that he is thoroughly justified in doing this and the thing soon becomes a habit

The service is burdened with many rounders of this type who represent many, many types of individuals Some are vicious malingerers but many are unconscious of any improper motive They are a distressing problem to the management of a hospital to the district supervisor, and to the War Risk Bureau They have not, many times, a legitimate difficulty, and yet, if they are dismissed from one service they will immediately get into another and because of their own belief in their symptoms or their own misinterpretation of their symptoms they succeed in getting into another hospital, getting more attention and deriving more profits not strictly belonging to them This situation, I think, has been thoroughly recognized by the profession at large Because of the multiple complaints made by these patients they have been directed from one physician to another for examination, nearly always with negative results But let it be repeated that often the patient honestly believes that he is thoroughly incapacitated and he is so mainly because he cannot conceive the difference between his individual equation and one that is more efficient

CLASSIFICATION OF CASES TREATED AT THE HOSPITAL

	Classification *	Number
243	Constitutional inferiority	10
244	Constitutional psychopathic state	8
287	Dementia praecox (unclassified)	6
288	Dementia praecox catatonic type	2
289	Dementia praecox hebephrenic type	1
290	Dementia praecox paranoid type	8
198	Exophthalmic goiter	3
468	General paralysis of the insane	2
628	Hysteria	71
628	Hysteria with organic factors	6
628	Hysteria with concomitants	3
628	Hysteria with admixtures	2
845	Neurasthenia	43
845	Neurasthenia with organic factors	14
845	Neurasthenia with concomitants	4
845	Neurasthenia with admixtures	3
851	Neurosis gastric	5
857	Neurosis traumatic	22
1006	Psychasthenia	8
1010	Psychosis hysterical	2
1011	Psychosis intoxication (inebriety consisting of alcoholism and morphinism)	4
1012	Psychosis manic depressive	6
1341	Tuberculosis chronic pulmonary	4
2049	Psychosis with constitutional psychopathic inferiority	1
2052	Constitutional psychopathic inferiority with admixtures	5
2053	Mental deficiency without psychosis	5
	Miscellaneous †	30

* The numbers in the left hand column are those of Nomenclature of Diseases and Conditions U S P H S 1916

† Among these thirty miscellaneous cases occur a number of organic cardiac cases several respiratory cases a few uncommon organic affections and isolated cases of the more unusual neurologic and psychiatric conditions

Under inadequate personality traits we recognize psychosomatic inferiority or constitutional inferiority without the markedly morbid psychopathic manifestations The constitutional psychopathic inferior is usually that ingrate liar, social misfit, and delinquent so well known to all psychiatric workers Occasional cases represent individuals reacting at the level of the constitutional psychopathic state Mental subnormality and mental deficiency have already been referred to both appearing very frequently and quite usually dominating the symptom-picture of the individual case, and rendering prognosis more or less hopeless as these states usually predispose to delinquent and criminal tendencies

The 281 cases treated in this hospital from its opening, July 10, 1919, to the end of the fiscal year June 30, 1920, were classified according to the accompanying table

PROCEDURE AT THE HOSPITAL

The general problems involved in the study of these cases is primarily the study and understanding of each case individually, the individual psychosomatic entity the detection of organic disease as pathology or physiopathy, to determine when such changes are found the actual degree of disability in function and its relation and bearing on other somatic states, to determine whether it can be cured, relieved or condoned with or without residuals, and by what means alterations may be brought about These problems lead to every degree of diagnostic and therapeutic detail and hold within them the possibilities of many interesting studies

Together with the somatic side of the equation comes the psychic, and one must determine at what psychobiologic level the patient is reacting and to what extent this level can be modified to meet the necessity Is the patient cooperative or lacking in cooperation, can he be induced to cooperate, or does he persist antagonistic or indifferent, has he an inalienable fixation on some organic malady that does or does not exist without somatic importance? Does the whole picture represent a neurosis by virtue of suppression repression, compensatory states, regression or dissociation? Does the patient desire to recover from this present condition or is he satisfied to remain indefinitely in his present state? By what means can the patient be appealed to? This requires at times considerable unwritten ingenuity and one does not always succeed on the first approach But a failure at first approach is seldom fatal because one usually learns of the other open avenues or, if none are apparent, it may be advisable or necessary to employ one's forces directly against the resistance in continuous bombardment until it is broken down and thus overcome

Without going into details that are a matter of common experience, it will be apparent that in each case differential diagnosis is paramount A thorough analysis of all components of probable morbid import must be carried out with painstaking care Those elements of the individual personality expressing the psychobiologic level at which the patient was reacting at the time of the first manifestation of his difficulty, and the further psychobiologic level at which he is reacting at the time of his admission to the hospital are factors of which at least a partial understanding must have been arrived at before therapeutic management can be expected to prove successful

In this hospital we endeavor to analyze every one of the individual symptoms, and estimate their importance to one another and to the whole or any part of the composite whole This is augmented by the administration of all classes of applicable tests and diagnostic methods known to general and special medicine The final results of such studies are from time to time reviewed and discussed in a conference of all members of the hospital staff

Under the head of therapeutic management are obviously classed all such methods as are usually recommended and adopted in special therapeutics The first effort made toward the rehabilitation of these ex-service men is on the physical side if any physical disease is at all apparent Such efforts are supplemented by psychotherapeutic persuasion, suggestion and reeducation, and all other practical methods are applied and persisted in, together with work, amusement, distraction, recreation, and what other efforts seem to be

indicated or are necessary to be instituted to remove or modify the patient's malady or special difficulty The final results, however, in these cases are very dissimilar Work with this class of patients is not the most encouraging A few patients are cured, many are relieved, many of them refuse treatment and are discharged at their own request some desert from the hospital, others refuse treatment or refuse in any way to cooperate Many patients move from one hospital to another, either on the same pretext or by introducing a new symptomatology They leave one hospital and immediately proceed to another where they also stay only a short time They thus often fail in every way to cooperate or to receive any essential benefit from their observation, attempt at supervision, or offer of treatment The reason for this attitude has already been adequately referred to Careful study of the personal history, supplemented by observation of cases in hand, leads one to feel that one is not treating a disease but a personality The study of personality, though engaged in by able men for several generations, is still in its infancy, its modifiability is still governed only by the requirements of each individual case

It is the policy of this hospital, so far as possible, to maintain a case as long as treatment is necessary, and to accomplish in the least possible time the greatest amount of benefit to the patient This cannot be fully accomplished readily, as one must make extensive alterations in the personal equation One must create in his patients a desire to get well and so encourage that desire that they are willing to help themselves A predominating tendency among these patients is to be quite satisfied with their present condition and to blame their physician for everything in the world—except their own presence They respond very slowly to advice and reluctantly get about doing anything personally constructive A few very satisfactory patients come in with a desire to get well and make wonderful effort to accomplish that which is explained and outlined, and usually promptly succeed in getting well Others are able to learn to condone certain conditions that cannot be removed and hence they go out quite at *their normal* capacity The period of hospitalization, however, which is required to bring about these results is rather long We rarely have a patient under observation and treatment less than thirty days Patients are more frequently under treatment three, and occasionally six months On a few occasions, hysterics have entered the hospital and within a few hours have been relieved of their incapacitating manifestations and sent home Not a few others for similar conditions have entered the hospital, and within a short time have discovered that if they remained in the hospital they would lose their malady and hence, in terms of probable monetary considerations, deemed it selfishly advantageous to sever their relationship with the hospital as soon as possible Thus, in point of type of case and therapeutic requirement, the proverbial variation is in no sense wanting

SUMMARY

The psychoneuroses met with in the U S Public Health Service hospitals are more the neuroses of *ex-service* men than they are the neuroses of *war,* and as such their symptomatology is becoming progressively more like that of the civilian neuroses

In grouping the neuroses of ex-service men, the common nomenclature for the psychoneuroses has been adhered to and, when various elements with a war coloring have occurred, they have been added as admixtures or concomitants of the symptom-composite The latter include the therapeutically stubborn pension neurosis, and that even more unyielding psychic syndrome seen in ex-service men of foreign birth and characterized by a parasitic incapacity born of the patient's unalterable opinion that the discharge of his patriotic duties merits governmental benevolence for the rest of his days

The therapeutic management of the neuroses of ex-service men is beset by many problems In the solution of these problems, many difficulties are encountered, but a fair proportion of favorable results are being obtained

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ABSTRACT OF DISCUSSION

DR SMILEY BLANTON, Madison, Wis Dr Benton, in making his diagnoses and drawing his conclusions, did not content himself with a *one-sided examination* either from a mental or a physical standpoint. Because of the unusual equipment of the hospital, as well as the attending specialists, Dr Benton was able to make a complete study of each case from a physical standpoint He added to this a thorough study of the patient's personality Dr Benton's emphasis on the fact that the neuroses are really due to lack of adaptation to life often caused in the war cases by a break in continuity and that the physician must concern himself not so much with the disease but with the personality, accentuates a forward looking phase of our work which is sometimes neglected Dr Adolph Meyer, at a recent meeting of the American Psychiatric Society, called psychiatry "critical common sense" Dr Benton has used judgment in studying and treating his cases He has taken the best from Freud Adler and Jung and mixed it with critical common sense We cannot regard a man as a series of organs or think of his difficulties as being caused alone by syphilis congenital or acquired or other subtle organic lesions, but, having exhausted all means of physical diagnosis, must go forward, as does Dr Benton and treat the personality In treating the personality one must adjust the individual to life in such a way that he can lead a healthy existence As Robert Louis Stephenson so well expresses it 'We cannot cut the Gordian knots of life but each must be smilingly unraveled"

DR WILLIAM HOUSE, Portland Ore The men who spent a few weeks in camp met with minor accidents and now want the government to support them as long as they live are creating a great pension problem Extreme care must be exercised to avoid injustice to any person who really served and the benefit of the doubt should always be given the claimant Most of the men I have in mind suffer from constitutional psychopathic inferiority Sanatorium care, because of the present public attitude is often necessary though dangerous in that it may serve to perpetuate illnesses we aim to cure The United States Public Health Service expects us to estimate the degree of disability from which they suffer How can one estimate the degree of disability of a neurasthenic when on every side we see neurasthenics successfully conducting large businesses and others, apparently no worse, giving up and doing nothing? I predict that in time large corporations will require neurologic examinations of all employees who are to engage in dangerous occupations as a consequence of which better results will be obtained from state industrial compensation and similar acts

DR EDWIN W HIRSCH Chicago The trouble with the public health service is that they try to "mill" men in and out and not handle them as individuals It has been asked of what use it was to win the war if we lost the world Of what use is it if we make a diagnosis and lose the patient? The eye ear nose and throat man sees only his division and the heart man sees cardiograms, but it is only the specialist in nervous and mental diseases who sees the man and if we treat the man and not the disease, I am sure there would be many recoveries I have had the opportunity of seeing the work Dr Benton has done at Waukesha

Many men cured thereby are being sent out to dig a ditch or split a log Dr Benton puts confidence in them and before long they are cured By making the treatment individual, he gets results

Dr FRANK R STARKEY, Detroit We have had neuroses dating from the Civil War, and there have been other events in the lives of individuals that have produced profound impressions I used to meet an old man who had been in the Civil War, when he was asked what his business was, he would reply that he was a medal of honor man He had performed an unusually heroic action at the battle of Gettysburg, and for this he was given by congress the highest military award, and that even changed the man's personality Previous to that he was industrious a good provider to his family and a useful citizen Since then he has been 'a medal of honor man and he has not earned his living for the last fifty years In many individuals who have met with an accident their whole life revolves about that A profound psychic shock can produce a complete change in personality I think it is incumbent on the medical profession to try to erase these impressions from the minds of the men who have experienced these changes in continuity, especially those who have been disturbed by the great event of the World War and direct them back into normal channels of thinking Try to give them a more nearly reasonable sense of proportion so that they may again take up their regular field of activity and become useful citizens rather than a burden to the government

Dr CHARLES R BELL St Paul The method of dispensing compensation in the war neuroses is at present in a deplorable condition and seems to be getting worse rather than better The experience of other countries where compensation in industrial injuries has been paid as long as the patients continue with their symptoms and claim disability has been most unsatisfactory Nonne says that this plan of paying compensation in Germany in injuries occurring in industry is making the German working man a neurotic It is not good for either the physical or moral well being of the individual receiving it If our concepiton of compensation neurosis is correct which is, that behind the symptoms is the motive and that the symptoms stand in the service of the motive and the motive is consciously or unconsciously compensation we are doing the worst possible thing for our neurotic soldiers Endeavoring to bring about a recovery in such cases under present conditions is comparable to attempting to cure a case of poisoning by administering more poison This would be regarded as rather an absurd and impossible procedure

Dr C R WOODSON St Joseph Mo I think a mistake has been made by the government in not examining these men before accepting them for service in the army Men were inducted into the war who had been treated for epilepsy, those who were feebleminded and those in whom there was a strong ancestral taint They are now demanding compensation and if they are passed on by a war risk board as not deserving they will pass to the Red Cross and come on again and get before two three our and five war risk boards with the possibility of finally being found eligible to compensation Many of them are not properly fed, too many of them do not want to get well If you talk about their getting better or being not suitable cases for compensation that is not satisfactory It is the same with the old soldier coming up for his pension, he limps has a long face and an air of profound misery but after he receives the pension he may be observed to be very much better

Dr JOHN F HERRICK Ottumwa, Iowa A man was blown up on the battlefield by a shell explosion thrown about 30 feet and was covered by dirt He was brought into the hospital suffering from nerve shock and with a marked general tremor This continued although the man had not been injured physically beyond a shaking up Remembering some experiences in civil life, I told him his injury was purely mental he had seen the shell coming and had believed he was going to be killed and this profound impression had sunk into the subconscious and was causing the symptoms from which he was suffering I told him that if he could get rid of that impression he would get bodily relief, if he could make himself realize that he really was not injured, his tremor, etc, would disappear He stopped shaking and went about his work On the other hand when I say an officer tell a man, 'There is nothing the matter with you, get out and go to work it made him worse These men have received a profound impression on the subconscious memory, and it is necessary to show them how the impression is implanted, and by analyzing that with common sense the thing clears up

Dr GEORGE H BENTON, Waukesha Wis Our experience is a common one, for these patients are very similar all over the United States The difficulties under which we labor are pretty well understood Many unfortunate and many perplexing things come up Congress has not the slightest idea of the facts of the situation and is influenced by individual political interests Many stories are going about of the abused ex-service men standing on the streets without home or provisions The psychoneurotic enjoys being in the center of the field getting attention and sympathy Many things could be done that would help these patients and the men attempting to help them We have little or nothing to do with the so-called shell shocked man I have always maintained that the man actually shocked from concussion got well or succumbed Any little unusual experience was termed shell shock during the war by the man wanting to be eased of the responsibilities of life Dr Ball referred to the thing I called popular hysteria which has added to the troubles of those handling the war risk benefits In Waukesha we give attention to all somatic factors we give the most thought and spend the most amount of work in treating the man's personality

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QUANTITATIVE ESTIMATION OF THE TOTAL PROTEIN IN THE CEREBROSPINAL FLUID*

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AND
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BOSTON

Increase in protein is probably the earliest and most constant abnormality noted in the cerebrospinal fluid under pathologic conditions Not only does protein accompany even the most sluggish meningeal inflammatory process, but venous congestions are also accompanied by the appearance of protein in the cerebrospinal fluid in excess of normal Protein excess may then be an index not only of an exudative meningeal process but also of the degree of permeability of meningeal vessels under pathologic or abnormal physiologic states In the one case the protein is of exudative in the other of transudative origin

With its diverse sources of origin then, protein determination becomes of fundamental importance as a nondifferential test No other test wholly supersedes it, and certainly no differential protein test wholly displaces it And yet for years we have been satisfied with performing rough qualitative tests, the results of which were frequently construed as "positive' by one observer, "negative" by another varying with the degree of experience, shades of light size of test tubes and other factors, more or less uncontrolled It was the desire to place protein determinations in figures which led us to seek the aid of a chemist and Dr

*From the Neurological Department Laboratory Massachusetts General Hospital

*Read before the Section on Nervous and Mental Diseases at the Seventy Second Annual Session of the American Medical Association Boston June 1921

Denis[1] elaborated a method which has proved satisfactory and not too difficult of application. Briefly the method consists of precipitating the fluid protein in a colloidal state by means of sulphosalicylic acid and reading by means of a colorimeter against a standard prepared at the same time from a blood serum solution of known protein content. The percentage of error by this method was found to be less than five.

This technic has been carried out exclusively by one of us (H. E. F.) during the last year, and approximately 2,100 readings have been made. The method has, we feel, abundantly justified the extra amount of time consumed, in many ways the figures obtained have been of value.

First, and obviously, the quantitative method has served to control the quicker and less accurate methods. Time and again preliminary estimations of protein said to be "normal" have been changed to a definite "increase," and occasionally the reverse has been the case. While the borderline between normal and pathologic will always exist, we feel that by means of quantitation the line is more closely drawn.

Second, we have found a value in following the protein content of the fluids from patients under treatment for neurosyphilis. While much has been written concerning the cell count, colloidal gold test and Wassermann reaction under treatment little has been said with reference to protein. By this method it is indicated that protein begins to fall early under treatment in all forms except paresis, in the latter it may even increase, although the cell count is dropping.

It was our interest in studying fluids from different loci of the subarachnoid space which made a more exact method of protein determination imperative, especially in the early diagnosis of spinal subarachnoid block by tumors and other pathologic states. Not infrequently a fluid is obtained by lumbar puncture which is slightly abnormal in protein content, but which might, and frequently does pass as of no significance. When, by means of cistern puncture, we begin to compare the fluid above with that below, a difference of more than the slightest degree is found to be of importance. We have found such comparative readings of great value in the diagnosis of cord tumor as significant as, and of more practical value than, the dramatic xanthochromic fluid with massive coagulation.

While protein values in different pathologic states are of only relative worth certain disease entities or conditions do appear to give fairly constant readings. A preliminary table has already been published from this laboratory,[1] the averages in which we now believe to have been too high. The accompanying table based on a much larger number of tests, supersedes the previous one.

COMMENTS ON TABLE

From more than 2,100 quantitations from approximately 800 patients we have used 429 of these from as many patients in making up the table. They were not chosen to conform to any preconceived idea but only if the history, symptoms and laboratory findings permitted of a fairly definite and accurate diagnosis. Only one reading from each patient has been used although many have had from six to twenty readings.

I. *Normal*.—The average is within the limits set by other observers but somewhat wider range has been found in our series than most workers record. There are so many physiologic and non-neurologic pathologic conditions which exert a greater or lesser influence on the normal content of the spinal fluid that it is hard to draw a sharp line. However, we feel very strongly that any total protein quantitation above 40 mg. per hundred c.c. is distinctly pathologic.

TOTAL PROTEIN IN CEREBROSPINAL FLUID

	Number of Cases	High Mg. per 100 C.c.	Low Mg. per 100 C.c.	Aver. Mg. per 100 C.c.
I. Normal (no affection of central nervous system demonstrable)	48	38	16	25
II. Syphilis of the Central Nervous System				
Tabes				
1. Active untreated	31	140	27	78
2. Active treated (tests still positive)	24	174	29	54
3. Active with general paresis gold solution curve (untreated and treated)	18	120*	38	74
4. Inactive (symptoms stationary tests essentially negative)	10	45	17	30
Paresis (untreated and treated)	7	143	50	89
Optic atrophy (untreated and treated)	18	225	19	74
Cerebrospinal Syphilis				
1. Meningitic type (average 253 cells)	4	118	80	90
2. Active (average 26 cells)	12	218	28	73
3. Inactive (average 3.5 cells)	6	56	26	43
Latent syphilis	3	114	37	60
III. Non-neurologic Syphilis				
1. Primary active (blood positive)	5	4	31	28
2. Secondary active (blood positive)	11	60	20	37
3. Tertiary active (blood positive)	10	1	18	3
4. Inactive (blood negative)	17	4	20	34
IV. Vascular Hypertension				
1. With symptoms of old cerebral lesions (hemiplegia etc.)	13	140	20	63
2. With symptoms denoting recent cerebrospinal lesions	15	90	20	51
3. Without evidence of cerebral lesions (uremia etc.)	14	130	22	61
Vascular Disease with Hypotension				
1. Chronic myocardial insufficiency	1			40
2. Stokes-Adams syndrome (old cerebral infarction—necropsy)	1			—
V. Epidemic Encephalitis				
1. Active stage	27	174	21	67
2. Convalescent	6	60	20	36
VI. Poliomyelitis				
1. Acute	5	81	67	75
2. Inactive	1			23
VII. Meningitis				
Tuberculous	10	2	68	150
Acute forms (streptococcic and pneumococcic)	5	925	641	364
Serous	2	8	67	77
VIII. Degenerations of Central Nervous System				
Paralysis agitans	5	74	20	45
Multiple Sclerosis				
1. Progressive	17	108	15	48
2. Inactive	4	93	21	48
Infection (?) of spinal cord (diffuse myelitic type)	3	247	42	119
Friedreich's ataxia	1			19
IX. Brain tumor with increased intracranial pressure	3	160	20	64
X. Brain abscess	1			100
XI. Miscellaneous				
Epilepsy (no pathologic lesion known)	11	60	17	20
Myasthenia gravis	1			19
Toxic amblyopia	3	80	26	49
Retrobulbar optic neuritis	1			20
Scorbutus	2	67	34	51
Hydrocephalus (communicating)	2	54	15	20
Acute systemic infection (typhoid and pneumonia)	2	21	19	20
XII. Combined Cistern and Lumbar				
1. Normal				
Cistern	5	30	19	23
Lumbar	7	42	19	29
2. Block with Hydrodynamic Evidence				
Cistern	11	80	20	39
Lumbar	11	111	50	341
3. Block without Hydrodynamic Evidence				
Cistern	6	100	19	52
Lumbar	6	840	62	296
4. Progressive myelitides				
Cistern	4	100	24	59
Lumbar	4	160	50	96

* One case presumably belonging to this group but undoubtedly complicated gave 23 mg.
† Only one case so low next lowest 1+.

II. *Syphilis of the Central Nervous System*.—Tabes. Although both the upper and lower limits in the treated active cases exceeds those of the untreated active cases, it will be noted that the average in the former is markedly lower. The average of the active

1. Denis, W., and Ayer, J. B.: A Method for the Quantitative Determination of Protein in Cerebrospinal Fluid, Arch. Int. Med. 26: 436 (Oct.) 1920.

cases presenting paretic colloidal gold curves—untreated and treated—seems to confirm the contention of many writers that Lange's test is more or less of a quantitative protein test To this we cannot accede, as the same curve is given in conditions other than general paresis, especially multiple sclerosis, in which disease the protein readings are more nearly normal The inactive cases show some variation, the average being within normal limits

Paresis, Untreated and Treated The striking feature of these figures is that while the high limit is not as high as in some other central nervous system syphilitic conditions, the low is the highest of the entire syphilitic groups excepting the meningitic type, and the average is also the highest of the infectious disease encountered except the meningitides

Optic Atrophy, Untreated and Treated The wide variation here is due to the inclusion of both early untreated and treated cases, some of which have been quiescent for years In patients favorably responding to treatment, the protein decrease is the first sign usually noted, and the quantitation here is especially valuable in prognosis

Cerebrospinal Syphilis (clinically and from laboratory findings, progressive and nonprogressive types), The meningitic type with an average cell count of 253 gives the highest average, although the range is much less than Group 2, with an average of 26 cells Both of these types usually have positive spinal fluid Wassermann reactions The inactive type with low normal cell count and usually negative fluid Wassermann reaction, nevertheless, gives a protein average over 50 per cent higher than normal

Latent Syphilis of the Nervous System Patients never having had any neurologic symptoms, but with positive laboratory findings, are included in this group The average number of cells of the three patients was 18, while a wide protein range is seen, the average is over two and one-half times the normal average

III *Non-Neurologic Syphilis* (no sign of symptoms of neurologic syphilis)—the patients in the three classical stages all had positive blood Wassermann reactions The inactive cases had received enough treatment to give negative blood Wassermann reactions The spinal fluids gave a normal cell count and negative Wassermann reactions, and no globulin ring was recorded It is of interest to note that while the average total protein of each of the four subdivisions was within our normal, the cases presenting a primary lesion had the highest average The greatest variation was found to be in the secondary stage of the disease

IV *Vascular Hypertension*—With symptoms of old cerebral lesions such as hemiplegia and internal ophthalmoplegia, cases range from low normal to six times normal, averaging over two and one-half average normal

With symptoms denoting recent cerebrospinal lesions, a shorter range is given with a somewhat lower average

The fourteen patients without evidence of cerebral lesions (uremia, cardiorenal vascular, etc) had an average systolic blood pressure of 179, average diastolic of 105 In these cases the protein range is wide and the average over twice normal

Of the thirty-nine cases in these hypertension groups, only nine gave normal readings

Vascular Disease with Hypotension—One of these patients had chronic myocardial insufficiency and one Stokes-Adams syndrome with cerebral ischemia The former had increased proteins which may have been caused by former arterial hypertension or damage The latter at necropsy showed a cerebral infarction undoubtedly following a slowly forming thrombus His symptoms had been noted for a year and a half with remissions

V *Epidemic Encephalitis*—The wide extremes in the active stage are worthy of passing note The average here is two and one-half times the normal In the convalescent patients the average is high normal

VI *Poliomyelitis*—The three acute cases give a fairly uniform high total protein content, with average three times normal

VII *Meningitis*—Tuberculous These fluids were taken from early and late cases, but even in the early cases showing slight pleocytosis the lowest recorded protein was double a high normal, the average being six times average normal

Acute Forms Protein regularly increased giving as a group the second highest average of the entire series The one patient with the low protein content had a proved streptococcic meningitis Three protein determinations made on this patient within eight days were all low But for this case the average of the other four would have been 524 mg per hundred c c

So-called "serous meningitis" includes those cases with meningitic symptoms but without a corresponding pleocytosis or positive cultures, in which recovery took place It is assumed that in these cases the protein increase is of transudative rather than exudative origin

VIII *Degenerations of the Central Nervous System*—Paralysis Agitans While the average in these patients is not high it is sufficiently high not to be ignored Some of the patients were advanced in years, and a cardiorenal vascular condition may partially account for the high readings

Multiple Sclerosis The variations in both the progressive and the inactive cases are similarly marked and the two averages coincide In seven of the nineteen cases the content was within normal limits

Infection (?) of the Spinal Cord These were cases showing a rapidly progressive diffuse and extensive—myelitic process of unknown etiology

Friedreich's Ataxia The one case shows a low normal protein reading

IX and X *Brain Tumor and Brain Abscess*—To these groups we desire to add more determinations before making any definite statements However, from the brief series we are led to surmise that tumors and abscesses located in or very near the cortex will give an increased total protein

XI *Miscellaneous*—Epilepsy All cases of known or demonstrable pathologic lesion were omitted the so-called "idiopathic" epilepsies alone being chosen An average only slightly higher than our normal average is given It would be interesting to know what variation exists in the individual cases immediately following an attack and at some later period Unfortunately, the time relation of rachicentesis is unknown to us in this series

The remaining cases of this group need no comment

XII *Combined Cistern and Lumbar*[2]—These patients presented clinical signs and symptoms which might have been interpreted in the light of cord compression, partial or complete Included in the "nor-

[2] Ayer J B Puncture of the Cisterna Magna Arch Neurol & Psychiat 4 529 (Nov) 1920

mal" are cases which later were diagnosed syringomyelia, multiple sclerosis, etc. A normal difference in protein content between ventricular and lumbar fluids has been known to exist. We found very constantly a normal difference between cisterna magna and cisterna terminalis fluids to be from 4 to 8 mg. per hundred c.c. In the second subdivision of this group the extreme differences are found. These patients frequently had had a previous rachicentesis with a marked increase of total protein present. The combined punctures were made to determine the relative difference hydrodynamically and chemically. Several patients with cord compression operated on during the past year did not have the combined puncture for the reason that the lumbar fluid alone—showing in some cases the complete syndrome of Froin with a total protein of from 2,100 to 2,400 mg. per hundred c.c.—made, in view of the clinical findings, an evident diagnosis.

In the cases without hydrodynamic evidence of block, protein, quantitation plays a most important part. The clinical evidence coupled with the marked differences in protein from the two loci, completed the picture on which operation was advised.

COMMENT

What is the value of careful quantitive protein estimation? We believe that in many neurologic diseases the appearance of abnormal amounts of protein in the spinal fluid is one of the earliest detectable signs of pathology or altered physiology, and that it constitutes a nondifferential reaction of fundamental importance. If this is so it becomes necessary to know the normal amounts, and if possible, the amounts to be expected in different pathologic states. It is therefore obvious that an estimation of protein by an accurate quantitative method becomes essential.

For some years the French, pioneers in cerebrospinal fluid pathology, have expressed their protein determinations in figures, using for the most part the Mestrezat trichloracetic acid method, and more recently that advocated by Ravaut and Boyer,[3] in which silver chlorid is used as standard. While we have not used these methods, it is felt that our method, elaborated by Dr. Denis, should be even more accurate than these, in that the standard employed is a protein, and that an unknown protein precipitate is compared with a known protein precipitate prepared at the same time.

While all who examine spinal fluid form a rough conception of the amount of protein to be expected in normal fluids, and some authors give figures, it is well known that the normal variation is considerable. To one only slightly familiar with such examinations the estimation of normal and pathologic amounts of protein is bewildering. It was with the hope of establishing normal and pathologic groups that this method has been followed by us for the last year and a half. Can we establish normal, and separate pathologic states according to protein content? To a certain extent we believe that we can, as is apparent in the accompanying table, of which a few of the most significant figures will be discussed.

Normal.—We find to lie between 38 and 16 mg. per hundred c.c. Perhaps a larger number of cases would make the limits a little greater, but it appears safe to say that more than 40 mg. is always suspicious of an underlying pathologic process. True many figures below this occur in the different pathologic groups, but for the most part these low readings are found in convalescence or in inactive stages of chronic diseases.

Pathologic.—In considering pathologic states, we must admit at least two sources of spinal fluid protein, that which accompanies exudative processes, and that which comes from the blood by transudation or increased permeability of the membranes. The purest example of the former is an acute pyogenic meningitis, and of the latter the fluid below a cord tumor. In the milder inflammations, such as syphilitic meningitis, an amount of protein will be expected less than in the acute meningitides, and this is usually the case, but within the syphilitic group itself there are subgroups which show slight cell reaction and relatively great protein content. It is reasonable to suppose that this considerable protein output is not all the product of menigeal irritation, but is also a product of transudation and perhaps a manifestation of deep-seated parenchymatous disease. Thus we find the higher readings in the syphilitic group are either associated with acute meningitic types (exudative in origin) or with the more profound degenerative types, such as paresis (transudative in origin). We have, then, within the syphilitic group a valuable guide as to diagnosis and consequently prognosis in a careful correlation of cell count and protein determination. Similarly the persistence of excess of protein in the spinal fluid in syphilitics during treatment is of prognostic significance.

Of especial note are several groups of cases in which the spinal fluid is generally said to be "negative," but which are shown to be abnormal on careful protein determination. Of the group of cases presenting vascular hypertension, thirty out of thirty-nine presented hyperalbuminosis. Some of these patients had evidence of cerebral vascular accidents, and some did not. It is not too much to say that in these cases there is usually to be found protein excess which, because of lack of cells, is of transudative origin. This is a point but seldom emphasized, and one of considerable diagnostic significance. Presumably in a similar manner a limited number of cases of purely degenerative character, such as multiple sclerosis and paralysis agitans, have presented increased protein. The fluids from brain tumors and abscesses also are not necessarily "negative," but may present considerable protein excess. French writers have for several years paid considerable attention to this isolated protein reaction, but in America its significance appears to have been generally overlooked. With the quantitative method, a moderate but distinct protein increase is brought to the attention and cannot be discarded as of no significance.

As is well known, the acute forms of meningitis yield a very great amount of protein, but it was not realized by us until the present method was employed that a typical acute meningitis might be associated with a comparatively slight protein output even in the advanced stages of the disease. The amount of protein obtained in tuberculous meningitis agrees with preconceived ideas that the protein is moderately increased but less than in the pyogenic forms. Comment on the serous meningitic types must be withheld until more cases have been investigated.

3. Ravaut, P., and Boyer, L.: Nouveau procede de dosage rapide de l'albumine dans le liquid cephalo-rachidien, Presse med. 28: 42 (Jan. 17) 1920.

Since first called to attention by From[4] in 1903 the syndrome which bears his name (the chief characteristic of which is excessive protein) has been considered almost pathognomonic of spinal cord compression But it is only recently that the importance of lesser amounts of protein in the spinal fluid below cord tumors has been emphasized For more than a year, cases suspected of having cord tumor have been systematically studied by combined cistern and lumbar puncture in this clinic, an opportunity being thereby given to compare the spinal fluid above and below the obstruction It has been found normally that the cistern fluid shows slightly less protein than that obtained from the lumbar sac In almost every case in which tumor has been demonstrated there has been a distinct difference in the protein content of the two fluids Further, when it was possible by means of manometric readings to demonstrate a block in the spinal meninges, the protein content from a lumbar puncture was usually found increased to a marked degree, in some cases presenting the complete syndrome of From It is our belief that even slight increase in protein in suspected cord tumor is an almost constant finding and a sign of great value Another paper will deal with this subject

A point of interest, but one not brought out in the table, is the effect of repeated lumbar puncture on subsequent protein determination In a number of cases it was clearly demonstrated that in cases in which spinal fluid was withdrawn at an interval of a few days the second fluid regularly presented lower readings If the interval was increased to a week or more this was not the case This fact suggests a hypothetic hydrorrhea and an interesting correlation with so-called lumbar puncture headache

CONCLUSIONS

While we do not pretend that quantitative protein determination is a necessity in the hands of a competent and experienced observer, there is no question but that accurate estimation gives results in more certain and intelligent form, that slighter degrees of abnormality tend to assume unsuspected significance, and that in consequence diagnosis is rendered more acute

ABSTRACT OF DISCUSSION

DR. DAVID J KALISKI, New York What figures were obtained in xanthochromic fluids, and what was the difference in the cistern fluid and the spinal fluid? Were any studies made in cases of tumor of the cord in tuberculosis, or other meningitides or in cases of encephalitis? If there is often an increase in noninflammatory diseases like hypertension cases with no nervous changes how can the globulin content be used in differential diagnosis or prognosis in syphilis?

DR JAMES B AYER, Boston This method is nothing new For several years the French have expressed these protein determinations in figures This method is more accurate than the determination of the quantitative protein for the purpose of showing that the increase in the protein is one of the early manifestations that occur in the nervous system It is an attempt to express in figures a reaction which we believe is important This test seems to get most of the proteins and we believe it is of use in conjunction with other tests

DR JOSEPH B NEAL New York In connection with the work in the meningitis division of the Research Laboratory of the New York Department of Health, we have examined many spinal fluids—about 8,000 especially in acute conditions We realize the importance of the quantitative estimation of the protein content We are forced, however to rely on the qualitative methods which are not wholly satisfactory, because we have not a sufficient force to do the quantitative work. The *method we use is the nitric acid ring test for albumin and the Noguchi test for globulin* During the epidemic of poliomyelitis in 1916 when we were able to have a physiologic chemist capable of carrying on the quantitative work we found that *our qualitative readings of normal fluids* corresponded very well with the normal quantitative results, and that our readings in pathologic conditions corresponded very well also I think however that unless much of this work is passing through the hands of the same group of people there is a tendency to read albumin and globulin as normal when they are increased I should like to ask whether any effort has been made to determine whether there is a difference in the protein present when increase is due to transudate and when it is an exudate. According to Anglada the protein present in normal spinal fluid is serum globulin and that in pathologic fluid is serum albumin As to the syndrome of From I have seen two very typical cases occurring in poliencephalitis

DR HAROLD E FOSTER Boston We have examined and compared the xanthochromic fluid in cord compression with the cistern fluid and found the cistern fluid protein content to be within normal limits while the lumbar quantitative test gave 1 800 2 100 and up to 2 400 mg per hundred cubic centimeters In fact, we have examined xanthochromic fluid from below a cord tumor, an apparently From syndrome fluid from immediately above the tumor and a cistern fluid from the same patient The fluid from the middle locus gave a lower quantitative result than that from the lower lumbar region while the cistern fluid was within normal limits The word marked is a relative term and naming it with the hypertension group I meant that in many long continued cases of cardiorenal vascular disease the content was double or even more than double a normal average In interpreting transudative and exudative fluids one must always keep the whole picture in mind as well as the total protein content the pleocytosis being found in the latter In the nonsyphilitic groups we have seen fluids without a globulin ring which gave an increase of two or three times double the normal average protein content

4 From Gaz d hop 76 1005 1903

MESENTERIC VASCULAR OCCLUSION

WITH REPORT OF NINE CASES IN WHICH OPERATION WAS PERFORMED*

ROSS G LOOP M D
ELMIRA N Y

The first instance of occlusion of the mesenteric vessels appears to have been reported by Tiedeman, in 1843 while four years later Virchow described its pathology During the following half century a scanty literature, chiefly continental was contributed In 1904 Jackson, Porter and Quinby[1] made what remains perhaps the most important American contribution in which they collected and reviewed 184 cases from the literature and added thirty new cases from various sources Totter[2] in 1913, published a monograph which is the most comprehensive study of the subject in English This is based on six original cases in one of which the patient recovered without operation thus throwing considerable doubt on the accuracy of the diagnosis, and on 360 cases collected from the literature These, with other small groups of cases, make it safe to assume that about 500 cases are now on record

*Read before the Section on Surgery General and Abdominal at the Seventy Second Annual Session of the American Medical Association Boston June 1921

1 Jackson J M Porter C A and Quinby W C Mesenteric Embolism and Thrombosis J A M A 43 25 (July 2) 110 (July 9) 185 (July 16) 1914

2 Trotter L B C Embolism and Thrombosis of the Mesenteric Vessels Cambridge Cambridge University Press 1913

The purposes of this paper forbid a further review of what has gone before other than to state that it gives one the impression that mesenteric vascular occlusion is a very rare condition, a medical curiosity, and that it has an exceedingly high mortality. With the latter view, I am in full accord. The death rate is bound to be practically 100 per cent unless prompt and proper treatment is instituted and probably must remain distressingly high in any event. But as to its rarity, I take issue. It is my conviction that these cases frequently pass unrecognized, and that deaths from this condition are often ascribed to postoperative ileus, peritonitis and the like. Neither do I find in the literature emphasis on what appear to me to be some of its most characteristic features, both pathologic and clinical. On the contrary, I hold that certain symptoms, usually mentioned, are no part of this disease per se, but are those of a secondary peritonitis.

It is my purpose to report nine original cases of mesenteric vascular occlusion, with my own analysis and deductions, in the hope that I may aid in the construction of a composite picture of this condition which may make preoperative diagnosis possible or at least give us the melancholy satisfaction of recognition at operation.

Three years ago, I recognized my first case of mesenteric vascular occlusion—at operation. Since then I have encountered eight others in which this lesion was the deciding factor, and I am sure I have met with many similar cases in the past without identifying them. All of these cases have presented a pathologic picture so characteristic as to be unmistakable, and, in addition, a syndrome so uniform as to suggest a definite disease entity, on the recognition of which alone, rational treatment must be based. I must admit at once that I have as yet hesitated to make a positive diagnosis of this condition before operation, but in the latter cases of this series, I have listed mesenteric vascular occlusion among the two or three possibilities.

REPORT OF CASES

CASE 1.—A man aged 29 admitted to Arnot-Ogden Hospital, Jan. 28, 1918, in a dying condition, had been suddenly seized on the street with agonizing abdominal pain and vomiting seventy-two hours before. Vomiting, persistent at first, had diminished in frequency after the first eight hours. The bowels had moved several times without relieving the pain. The temperature was subnormal, the pulse infrequent but irregular and small. The skin was cold. The abdomen was very tender and full but not distended; there was no marked muscle spasm. Borborygmus was heard throughout the abdomen. Operation was decided on without definite diagnosis. Through a right rectus incision, a large quantity of clear, odorless and slightly blood tinged serum was evacuated. The appendix, slightly congested, was removed, but its appearance failed to explain the symptoms. Further exploration disclosed several coils of dark red, edematous, dilated small intestine. They did not tend to crowd out of the incision and seemed to be held down by a considerable weight of fluid within their lumen, which poured from one coil to the next as they were manipulated. About 4 feet of the intestine was thus involved. Some small oval areas were very dark, but no gangrene was seen. In addition, a heavy, doughy mass the size of my wrist was found dragging down over the pelvic brim, apparently adherent at either end, but as my fingers were insinuated about and under it, the lower end was brought up from the depths of the pelvis. It proved to be the mesentery with its attached intestine, which was more cyanotic than that first seen.

While uncertain as to the cause, resection of the intestine was indicated, but the patient's condition forbade. Enterostomy was performed and hugh quantities of fluid drained, but the patient survived only twelve hours. Necropsy was not allowed.

CASE 2.—A retired business man, aged 56, was admitted to Arnot-Ogden Hospital, May 12, 1918, with a diagnosis of acute appendicitis. He had serious cardiovascular-renal disease with casts, albumin and a systolic pressure of 260. He had been ill for three days with vague, moderately severe abdominal pain and occasional vomiting. The pain had now localized in the right lower quadrant. There was no distention of the abdomen and only doubtful rigidity of the right rectus. His bowels had moved daily, and the pain tended to be paroxysmal and colicky in character. While it was considered an atypical case, a diagnosis of appendicitis had been made some years before, and operation seemed indicated. A considerable amount of amber fluid came from the incision, and the intestine as far as examined, was dusky, heavy and dilated *not distended*, and contained a large amount of fluid and very little gas. The appendix was sclerosed and strictured at the tip, while its middle and proximal portions were definitely inflamed. It seemed a reasonable explanation of his symptoms, but the significance of the plum colored soggy intestine was not appreciated at the time.

After operation, the colicky pain continued much as before with occasional vomiting. His bowels moved reasonably well, but his abdomen gradually became more full, was dull on percussion but lacked muscle spasm. On the fourth day after operation and the seventh of his illness it became evident that he was not doing well, that something was radically wrong and a second operation was decided on. A midline incision brought forth a quantity of amber fluid, slightly blood tinged. The appendicular region showed no abscess or adhesions, but we soon came on several coils of dark, lifeless intestine containing but little gas and much fluid. They lay inert in the cavity, held down by their fluid contents which slushed about as they were handled. The peritoneum was glistening, but the intestinal walls were thick and edematous. About 4 feet was thus affected. The similarity of this condition to the one first described was noted at once, but when the exploring finger encountered a tense, heavy, thick mass hanging down into the pelvis, the identity of the two was striking. Thrombosed vessels and subperitoneal hemorrhages were found in the mesentery in this case, and the true diagnosis was established.

Intestinal resection was out of the question here and the case was managed in the same manner and with the same result as was the first reported.

CASE 3.—A school teacher, aged 35, seen July 5, 1918, at the Arnot-Ogden Hospital, had been operated on for suppurative appendicitis June 23, preceding and up to July 4 had done well. Drainage had ceased and the wound looked healthy. July 4 she had complained of flatulency and general abdominal unrest. Her appetite failed, and she appeared to be seriously ill. Fairly satisfactory bowel movements gave her no relief. The abdomen was full but not distended and was dull on percussion except over the stomach. There was no elevation of pulse rate or temperature. Further enemas and pituitary extract were used, but although there were fair results from the bowels, the patient felt no relief.

July 6 I opened the abdomen in the median line, after exploring the original appendectomy wound with negative results. Considerable free amber fluid poured out of the incision and about 5 feet of cyanosed dilated intestine was found, part of which was on the verge of gangrene. The mesentery was found as in the preceding cases. Intestinal resection with side-to-side anastomosis was performed. The patient did well for about a week, when a fecal fistula developed, probably from an extension of the thrombosis. This leak was evidently so high in the intestinal tract that it seriously impaired her nutrition and she died about two weeks after the second operation.

CASE 4.—A woman aged 47, seen Aug. 21, 1918, had been seized with violent abdominal pain and vomiting about an hour after her evening meal. Repeated doses of morphin had given her but little relief. She was in shock when I saw her at the ninth hour. The abdomen was flaccid, dull on percussion with generalized pain and tenderness. The temperature was subnormal. I advised immediate operation

on the diagnosis of mesenteric vascular occlusion, ruptured viscus or acute pancreatitis in the order named Permission was not granted at this time, but she was removed to the Arnot Ogden Hospital The bowels responded to enemas several times, and the vomiting became less frequent Pain was not relieved, however, and she continued to be in a state of shock At the twenty-first hour, operation was undertaken Eight feet of small intestine was found involved as before described, the same free fluid and the thick, heavy mesentery dragging down over the sacral promontory Resection was performed, and the patient survived twelve hours

CASE 5—A retired farmer, aged 63 with marked vascular degeneration was admitted to Arnot-Ogden Hospital, June 27, 1919, eighteen hours after a sudden violent onset of general abdominal pain and vomiting The bowels had not moved although enemas had been used He had singultus, general boardlike rigidity and was in shock Percussion was dull Operation revealed a large amount of free bloody odorless, sticky fluid and about 10 inches of dark, dilated intestine, at the upper limit of which was a tight constricting band, above which the intestine was normal The mesentery of the involved intestine hung like a tense rope over the pelvic brim and its vessels were thrombosed Division of the band and resection were performed

The patient did well for nine days the bowels moving well Then complete anorexia developed, he became depressed vomiting now and then and he died on the tenth day, either from an extension of the thrombosis or as I believe, from the intense heat then prevailing

CASE 6—A woman, aged 46 stout, plethoric with high blood pressure, but in general good health, had experienced sudden violent onset of abdominal pain but without vomiting and was admitted to the Arnot-Ogden Hospital, Sept 23 1919 seven hours after seizure The bowels did not respond to enemas There was exquisite tenderness throughout the abdomen but there was neither distention or rigidity During the examination, a large uterine fibroid was found Torsion of this tumor or mesenteric occlusion was considered Operation revealed a quantity of free fluid 18 inches of dark plum colored intestine and the characteristic condition of the mesentery Resection and anastomosis were performed and her recovery was rapid and complete I have since removed the fibroid and could not positively locate the site of resection

CASE 7—A woman, aged 64, with pipe-stem arteries and a long-standing symptomless femoral hernia, was seen Jan 24 1920 Three days before she had experienced sharp paroxysmal pain in the hernia for a few hours After this she vomited at intervals had vague abdominal unrest and occasional disseminated abdominal colic. She entered the hospital with a diagnosis of appendicitis, but I advised exploration of the hernia A small knuckle of bowel, not involving its entire lumen, was found strangulated and gangrenous in the femoral canal There was a gush of bloody fluid from the abdomen and above the strangulation the intestine was dark, soggy and dilated with a greatly thickened, heavy mesentery On account of her age, only the gangrenous portion was brought out of the incision and enterostomy was performed the next day, with an unqualifiedly bad prognosis The enterostomy drained well and she reacted satisfactorily, but she began to fail after the fourth day and died on the seventh from exhaustion and sepsis

CASE 8—A man, aged 35, admitted to Arnot-Ogden Hospital, Sept 7, 1920, had previously been in good health except for an attack of appendicitis twelve years before, for which operation was not performed He was taken with violent general abdominal pain and vomiting while at work Five hours later he was seen by the family physician, who advised immediate operation on a diagnosis of appendicitis Two hours later the pain becoming intolerable this advice was accepted and he was admitted to the hospital Vomiting had now ceased his pain was still severe despite large doses of morphin and he was in shock The abdomen was flat dull on percussion, and there was no muscle spasm

A midline incision brought a free flow of amber fluid and the small intestine, from just below its emergence through the mesocolon to within 15 inches of the ileocecal valve, was found dilated dark and lifeless and contained a large amount of fluid which poured from coil to coil as it was handled. The entire mesentery was doughy and thrombosed, strangled by a single loop of intestine which had become twisted about its root On releasing this coil a faint pulsation could be discerned at some points along the intestine and we had a half hearted hope that the circulation might reestablish itself Enterostomy was performed and the patient survived four days during which time the bowels moved fairly well Singultus tympany and distention developed on the third day and he died in a convulsive attack on the fourth

CASE 9—A man aged 20 seen Oct 15, 1920 three years before had gone twelve days without a bowel movement but had suffered no acute symptoms About a week before he noticed abdominal soreness when riding in an automobile The next night he had a few hours of abdominal pain and vomited He remained home from this time with poor appetite and increasing difficulty in causing the bowels to move For four days, they had not acted at all He had very little pain no distention and he vomited only after taking nourishment He lay in bed in an attitude of rest and with no expression of suffering There was no disturbance of pulse or temperature and no muscle spasm Loud intestinal gurgling could be heard as one sat near his bedside All efforts to cause the bowels to move had been unsuccessful From his history and present condition I suspected fecal impaction and advised further enemas insisting on the necessity of fluoroscopy should he recover by these measures

About twenty-four hours later he was suddenly seized with agonizing abdominal pain vomiting which soon became stercoraceous and shock He was sent to the hospital and immediate operation was undertaken Dulness had replaced the modified tympany of the previous day but there was no muscle spasm We found a large amount of free amber fluid and about 6 feet of cyanosed lifeless dilated intestine. The mesentery was as before described but on tracing it down into the pelvis we came on a large elastic mass which proved to be a cyst of the mesentery which had become twisted three complete turns thus strangling the circulation The torsion was relieved and enterostomy performed but he died twelve hours later

My interpretation of the events in this case is that three years ago when he had the twelve day period of obstipation the cyst rotated sufficiently to obstruct the bowel, finally righting itself It then remained symptomless until one week before I saw him when the first turn occurred The night he had his first pain and vomiting, a second rotation occurred And the third and final twist which caused the thrombosis occurred the day before operation

COMMENT

A study of these cases shows a pathologic picture which is strikingly uniform and characteristic, unlike that found in any other disease, and which, so far as my reading goes, has not been hitherto described in a way to enable the surgeon positively to recognize his first case The salient features in order of their importance are (1) the transparent, sticky peritoneal fluid, amber or blood tinged in color, odorless and without coagulated lymph, which was present in copious amount in every instance, (2) the cyanosed, plum colored, soggy, edematous intestine, with glistening peritoneum, free from adhesions, its lumen relaxed —not distended—to large caliber lying inert within the abdominal cavity, with no tendency to crowd out of the incision, held down by a weight of fluid within its lumen, but containing little gas The intestine may be mottled and may be on the verge of gangrene in small areas but no gross gangrene was seen in any of these cases Except for the absence of gas distention, it resembles the congested bowel often seen in large strangulated hernias, and one might readily enough expect it to come to life as the latter frequently does

(3) Most characteristic is the mesentery In all of these cases it formed a thick, doughy mass, dragging down over the pelvic brim as though adherent But this is not the case Sufficient force will bring it up with its attached bowel There are no adhesions Only the force of gravity and of negative pressure must be overcome, yet it comes up from the depths of the pelvis with much the sensation experienced by the swimmer in a heavy bathing suit when he lifts himself from the water Once delivered, thrombosed vessels may often be seen or felt and subperitoneal hemorrhages are occasionally observed It is a mechanical and not an inflammatory condition Peritonitis and gangrene, if found, are secondary and rather late changes They were not seen in this series, though some of the patients were operated on several days after the onset

Pathologically these cases fall into two general forms (1) In primary occlusion, the lesions found and the symptoms produced are due to the mesenteric obstruction alone (2) In the secondary form, occlusion of the mesenteric vessels occurs as a complication of such preexistent lesions as mesenteric cysts, strangulated hernias, suppurative processes within the abdominal cavity and the usual causes of intestinal obstruction

Symptomatically, two types of manifestations are likewise clearly marked (1) the fulminating and (2) the phlegmatic These correspond to the acute and chronic forms mentioned by some writers, but they appear to me to be more descriptive terms Either the primary or secondary forms may appear with fulminating or phlegmatic symptoms The fulminating type comes on with sudden, violent symptoms which are sufficiently characteristic in my opinion to make, with greater familiarity, preoperative diagnosis possible The phlegmatic type is so insidious in its development, and in its secondary form so interwoven with the signs of the preceding disease, as to make diagnosis before operation difficult or impossible But the pathologic condition produced is identical in the two types

Based on this smalll series of cases, two prevailing ideas concerning this disease must be unlearned (1) Extensive gangrene of the bowel is not seen unless it is a very late case, much later than these cases would ordinarily come to operation (2) Complete intestinal obstruction is seen only in those cases in which some of its usual causes are present as the primary disease

The striking symptoms are these 1 There is disturbed function of the bowels This may rarely express itself as a diarrhea, but, as a rule, there is difficulty in getting the bowels to move and the passage of flatus and feces fails to give the patient the relief ordinarily expected Complete obstruction, as rare as diarrhea, is usually due to some coexisting cause The presence of blood in the stools is mentioned by most writers but was observed only twice in this series

2 Vomiting usually occurs early—coincident with the pain in the fulminating cases—and may be almost continuous during the first hours It may become stercoraceous, and blood is occasionally seen The notable feature of the vomiting in this series is that it tends to diminish or cease after the first six or eight hours I explain this by the fact that after the stomach and intestine above the lesion are emptied, there remains only the natural secretions to irritate as they accumulate Peristalsis is reversed only above the lesion In the involved area there is no activity in either direction

3 Pain, sudden, violent and agonizing, marks the onset of the fulminating cases It resembles that seen in acute pancreatitis or rupture of a viscus It tends to be paroxysmal or colicky, and is more or less general In several of these cases it seemed to be worse over the left lower half of the abdomen, possibly being referred to the root of the mesentery In the phlegmatic cases, it is rather vague and fugitive and is not localized It is not influenced by bowel movements.

4 Shock is marked in the fulminating cases and its degree is to an extent an index of the amount of bowel involved

Of almost equal value in diagnosis are the absence of certain symptoms, often mentioned in descriptions of this disease and ordinarily seen in the "acute abdomen," namely (1) It is essentially an afebrile disease, the temperature rarely rising above 100 F, and often being subnormal The pulse is infrequent but may be small, irregular and thready, according to the degree of shock (2) There is little or no muscle spasm The flaccidity of the abdominal muscles is a very striking feature in a patient almost crazed with abdominal pain (3) The abdomen is not distended Neither is it scaphoid It may best be described as rotund but not under tension (4) The percussion note is dull or flat—not tympanitic This is as one would expect, having in mind the conditions within, free fluid and a relaxed bowel partly filled with fluid Such symptoms as rigidity, tympany and singultus are those of peritonitis and are seen, if at all, only late in the course

To summarize, the fulminating cases of this group showed this characteristic syndrome sudden, violent abdominal pain, not markedly localized, persistent vomiting, usually diminishing after the first few hours, slight or moderate fulness of the abdomen without muscle spasm, and a dull percussion note The phlegmatic cases are much less clear in their evolution There is vague abdominal unrest with occasional vomiting unrelieved by fairly satisfactory bowel movements and without localized tenderness This is as definite as I can draw the picture This type, if secondary, is so insidious that it is difficult to say when the primary disease becomes complicated

But if we are unable to comply with the demands of ideal surgery to the extent of preoperative diagnosis, the pathology is so characteristic that no error should be made when, in conformity with the demands of "practical" surgery, we recognize an "acute" or "surgical" abdomen and open for exploratory purposes Too often, I fear, has such an abdomen been drained or closed with a diagnosis of peritonitis of unknown origin, self-reduced volvulus, or intussusception, or similar diagnosis, unhappily with a favorable prognosis, the patient deprived of his only chance for recovery, and the surgeon placed in an embarrassing position, when had the real condition been recognized, enterostomy or enterectomy and an unfavorable prognosis were indicated

The prognosis and treatment can be briefly stated My mortality has been 88 per cent—one recovery in nine cases—and I find but few writers who estimate the mortality below from 70 to 75 per cent A very limited involvement, in a patient seen early and treated rationally, may yield a lower mortality, but with the ever present danger of extension, the prognosis must remain exceedingly grave

Rational treatment is based on the fact that the bowel deprived of its blood supply can not recover

elimination of the involved portion, be it large or small, by the quickest possible means is the only treatment, and the fate of the patient then rests on the further extension of the process and the possibility of slow starvation if the drainage is high in the intestinal tract

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ABSTRACT OF DISCUSSION

DR GEORGE M SHEAHAN, Quincy Mass All of us have suffered bad results from accidents of this nature I use the word accident advisedly as progress in prevention and treatment has been so slow—in spite of the importance of the subject—that these cases are rarely forecasted and as a rule are unsuccessfully treated The startling suddenness of development and the fatal outcome make postoperative embolism, mesenteric or otherwise a sort of surgical sword of Damocles Early diagnosis appears to be the important point and it seems to me that Dr Loop has drawn a better and more helpful picture of the condition than any other we have had up to the present time As to frequency, Dr Loop stated that the condition is less of a rarity than supposed This of course is a relative matter—it certainly is true that vascular pluggings and infarcts are common pathologic findings, nevertheless it must be admitted that mesenteric vascular occlusion is rather rare At the Massachusetts General Hospital, where they have about 4 000 surgical cases yearly there were only thirteen cases of this condition in twelve years Nor do I agree entirely that any considerable number of cases are overlooked The pathologic records do not substantiate this view It is the severity of the condition not its frequency which makes it so important As to diagnosis it would seem well to confine our attention in large part to the phlegmatic type as for obvious reasons nice distinctions in the fulminating type are difficult What hope we have of a better prognosis seems to be in better treatment of this type, and in the diagnosis I am thoroughly convinced that an accurate history is the important factor These cardinal points should prove most helpful (1) suddenly disturbed function of the bowels (2) vomiting and (3) pain violent and agonizing not influenced by bowel movements The similarity of this description to Clubbe's description of early intussusception is striking There are other points of similarity between the two conditions The presence of circulatory disease advanced or middle age cirrhosis of the liver or sepsis, may help in the diagnosis, but they are by no means constant and are practically of no negative value. Among the more recent cases at the Massachusetts General Hospital are three in which the patients are in the neighborhood of 30 years of age two of them having absolutely normal circulatory apparatus Of course the explanation is that this condition may be due to various causes among them being sepsis trauma slowed circulation and disease of the circulatory organs The evidence seems to be fairly strong —not absolute—that the majority of these occlusions are in the superior mesenteric artery If this is the case it is simply another strong argument against rough handling of the intestine Only two of Dr Loop's patients showed bloody intestinal discharges This is not what one would expect from the pathologic findings, nor do I think it agrees with the majority of the clinical findings for if I remember correctly Dr Bottomley has several times called attention to the importance of this symptom A possible explanation is that in some cases it is terminal in nature Treatment must depend on surgical judgment in the individual case

DR W D JOHNSON, Batavia, N Y Among the features that are outstanding is the absolute accuracy of description of cases by Dr Loop In actual practice we need to recognize the nature of our cases before we operate and we need to recognize them at the time we are operating I do not think the condition is quite as rare as Dr Sheahan believes I have seen six cases in five years The last case was confirmed by a postmortem We had removed an exophthalmic goiter, and in the subsequent period of low blood pressure mesenteric vascular occlusion occurred The essential thing to recognize early in these cases is that it is a case of "acute abdomen" and that an immediate operation is needed In the only case in which I had a chance to operate, the remainder of the bowel turned black during the resection, and all I could do was to close the abdomen

DR J L BLISS, Holyoke, Mass I have seen one case of occlusion of the mesenteric artery The man was a wool sorter He was suddenly seized with crampy pain in the abdomen and vomited His abdomen was soft, the temperature 96.5 F, pulse 60 The temperature rose to 98.6 and pulse 104 on the following day Some abdominal distress was present but no vomiting and no movement An enema turned some fecal matter After the enema he vomited a glass of malted milk During the evening his stomach was washed and a high ox gall enema given The enema was returned with small particles of fecal matter Stomach washing returned fecal material and some castor oil given the night before There had been no bowel movement, and there was very little abdominal pain He termed it a disagreeable feeling The abdomen was distended to a moderate degree but soft He appeared anxious and somewhat restless Operation was performed that afternoon The intestines though somewhat distended, did not enter the opening as usual but lay an inert soggy mass a mahogany red with darker gangrenous spots The intestine contained considerable fluid Death occurred a few hours later With the exception of the upper portion of the duodenum, the entire small intestine was dark, almost black and gangrenous The cecum was somewhat reddened the mesentery was dark and edematous The large intestine was pale and empty

DR ROSS G LOOP, Elmira N Y The main point I wish to make is that this is a mechanical as contrasted with an infective process My mortality has been eight cases out of nine although but one patient in the series could have been reasonably expected to recover Two of them survived for about two weeks, one died on the tenth day, I believe of heat prostration, for his bowels were moving well and he had no vomiting The treatment consists of elimination of the involved intestine by the quickest possible method, usually by enterostomy Resection requires too much time as a rule

THE MEDICAL SIGNIFICANCE OF THE DISORDERS OF SPEECH*

SMILEY BLANTON M D
Associate Professor in Speech Hygiene and Associate in Neuropsychiatry University of Wisconsin Medical School Attending Specialist Speech Clinic U S Public Health Service
WAUKESHA WIS

The speech area has not been demonstrated in the brain at birth, and the development of speech is not inevitable An intact auditory apparatus, the presence of intelligence, and an intact nervous and muscle system are required for its proper development, plus certain emotional and social demands and situations under the stimulus of which it is organized

Speech disorders then, are early and invaluable symptoms of anomalies of intellectual and emotional growth as well as organic difficulties of the nervous system

I shall not touch on the organic aphasias, but shall confine the discussion to the four tentative groups (1) delayed speech, (2) letter substitution, (3) oral inactivities of the articulatory organs, and (4) stuttering which includes the disorder of stammering These disorders should be regarded as symptom complexes rather than as disease entities These types are rarely simple and clear cut

* Read before the Section on Nervous and Mental Diseases at the Seventy Second Annual Session of the American Medical Association Boston June 1921

DELAYED SPEECH

Delayed speech has both its organic and its functional form The organic form is due to poor intelligence or defective hearing The functional form is due, in some cases, to faulty family attitude

A second type of functional form may be classified as an infantile neurosis, and is a fundamental lack of adaptation to the necessities of life, and speech is simply one and the most pronounced, symptom of the beginning disorder

LETTER SUBSTITUTION

This is commonly called lisping and lalling, and is the substitution of one letter sound for another, such as *th* and *sh* for *s* and *z*, and *w* for *r* This disorder is most often supposed to be caused by faulty occlusion of the teeth and malformed palatal arch We have been convinced that this is only a slight causative factor, through several group studies, one with the feebleminded, where the relationship between general intelligence and letter position was much greater than the relationship between arch and occlusion and good speech The second group study was made on 1,100 incoming freshmen *men* at the University of Wisconsin Ten of these men had good arch and occlusion, and letter substitution, fifty had poor arch and occlusion, and letter substitution, but 265 had poor arch and occlusion, and good speech

There is a second type, which is apparently a simple hangover of early childish habits

There is a third type, in which the intelligence is good but in which the personality as a whole is infantile and is somewhat shut in

ORAL INACTIVITY

The third type of disorder, which we have called oral inactivity has been relatively unclassified and unstudied It is known under the names of ideoglossia and "baby talk," "nigger boy talk," etc It has been much neglected, and relegated to the field of the elocutionist It is the common history, in the majority of these cases, that the parents of children so affected have been told that the child will outgrow this disorder That this is not so is demonstrated by twenty-nine of these cases of either medium or severe degree, noted in 1,400 university freshmen, whom we examined This type of disorder, of course, occurs as a prominent symptom in such organic conditions as general paresis, and in brain lesions caused by hemorrhage it is seen in the very toxic states in acute infections, in fatigue states, it it found in the stuporous and drowsy state of lethargic encephalitis A second type of this disorder is due to faulty hearing during the time when speech sounds are being learned

The third type is found in chronic states of fright and in general timidity states

The fourth form, on which we hope to report in detail later, we feel to be of great interest to the profession in general and to neuropsychiatrists and endocrinologists in particular This severe oral inactivity and faulty construction, especially of the final consonant sounds, we have classed as an endocrine-vitamin disorder group The factors that stand out most clearly are (1) a marked similarity of the speech symptom, (2) uniform vitamin deficiencies of water soluble B, (3) a history in a large precentage of the cases of dysthyroid condition in the mother, and (4) history of marked food disorders in infancy

STUTTERING

Stuttering, under which we include stammering, may be described as a break in the rhythm of speech, due to a blocking or inhibiting of the muscular coordinations It may not be considered as a disease entity but rather as a symptom of any of a number of underlying conditions

A tentative grouping of stuttering according to apparent causes can be made under the four following heads

1 Type 1 is the organic type, occasionally seen in paresis and other brain lesions We have observed recently a case of general paresis, in which there was a stutter, in no way different from the functional stutter Bastian [1] mentions a patient who on beginning to talk, began after the fashion of the stutterer" He diagnosed this case as complete aphemia due to a small lesion in the course of the internuclear fibers of the left hemisphere He also mentions its resemblance to the true functional disorders We have seen a case recently, with a slight hemiplegia of the right side, due to hemorrhage, in which there is as a result a marked stutter There is also in this case a perseveration of the muscle movement in writing as well as in speech

2 Type 2, which we have called paratonia, and which is probably akin to the endocrine-vitamin group of the oral inactivities, is certainly closely related to epilepsy and to tetany and catatonic states

3 Type 3 is the psychoneurotic, under which we have (*a*) the hysterical in the sense the word is used by Babinski [2] as meaning "caused by suggestion and cured by suggestion" The symptom in this case is caught in the school or, in the case of the war neuroses, in the hospital where the men were confined with others already so affected, or who had heard that this was a common consequence of war experience This symptom in many cases would tend to become prolonged by an hysterical mechanism after the immediate situation was relieved (*b*) The anxiety type, usually accompanied by "tics" closely resembling the somatic insufficiency tics, with which individuals, inadequate for some reason or other, meet situations that are too difficult for them to meet adequately

4 Type 4 is the hypomanic type The marked swings of mood in the true hypomanic stutterer are very typical The stuttering usually occurs in the depressive phase Under this fourth type also comes the stuttering seen in children just beginning to talk In fact, with the temperamental, high-strung, overemotional type of child, stuttering is very likely to occur in which the severity of the symptom bears no relation to the distress of the patient

Much light has been thrown on the problem of stuttering by the study of the war neurosis cases At Base Hospital No 117 which was a receiving hospital near the front, probably 50 per cent of the men had some sort of disturbance of the speech, either a complete loss of speech, or a break in the rhythm or the type of speech which Roussy and Lhermitte [3] called "nigger-boy" speech, and which we classify as oral inactivity

SPEECH CLINIC U S P H S HOSPITAL NO 37

We have had opportunity of making intensive study of the postwar neurosis cases suffering from speech disor-

1 Bastian Aphasia and Other Defects of Speech London p 75
2 Babinski J and Froment J Hysteria or Pithiatism, University of London Press p 17
3 Roussy and Lhermitte The Psychoneurosis of War University of London Press 1918 p 92

ders at the speech clinic of the United States Public Health Service Hospital No 37 organized at the request of Dr Lawrence Kolb, director of the hospital in January, 1920 Fifty-two cases have passed through this clinic Statistics were gathered from forty of these cases in which intensive studies have been made

Before concluding that most of the soldier speech cases were caused by psychoneurotic mechanisms, a complete study of the physical condition was made as well as psychologic tests for intelligence and mental imagery

The patients in the clinic beside having the benefit of the general staff of the hospital are given individual training by the speech clinic staff Only a small part of the treatment deals with the speech per se but concerns itself with general muscle training and emotional adjustment

The sending of these cases to the neuropsychiatric hospital was justified by the classification and diagnosis of the conditions under which the patients were laboring Fifty-seven and five- tenths were found to be suffering from hysteria, 5 per cent neurasthenic, 30 per cent were cases of anxiety neurosis 2 5 per cent had dementia praecox, 2 5 per cent were suffering from marked psychopathic states, and 2 5 per cent had marked hyperthyroid conditions With such a diagnosis, the futility of sending these men for treatment in the so-called "stuttering schools" or by elocutionists or phonologists becomes apparent

Some writers have maintained that the neurasthenia and other troubles were caused by the stuttering and not the cause of stuttering This we feel to be a fallacy, owing to several factors which I will present Since the war stuttering has been studied the fact has been brought out that the same type of temperament was present before the stuttering was developed as was shown after and that the temperament and the hereditary factors are virtually the same in those individuals who stuttered but who never experienced war, and in those who stuttered owing to strain in service but who saw no active service under fire at the front, and in those who stuttered previous to service, but relapsed under the strain and in those who did not stutter previous to experience under shell fire and in fighting

In the comparison of forty soldiers with 200 schoolchildren from 1 to 18 years of age some interesting facts are brought to light A comparison of the personality showed that 13 per cent of the children and 9 per cent of the soldiers were classed as showing no marked variation, 52 per cent of the children showed marked inferiority feelings showing themselves either in timidity or in overcompensations by extreme boldness, 54 per cent of the soldiers came in this class, 35 per cent of the children and 34 per cent of the soldiers were markedly moody, either of the temper, sulky depression or of the hypomanic types In addition 5 per cent of the soldiers were apathetic and dull none of the children were so classed Whether this is a true variation or a mistake in classification in the group of schoolchildren would probably be demonstrated in a study of a larger group

A study of the variation shown in the symptom of stuttering itself is indicative of its functional etiology Of the children, twenty-two were worse at school than at home, two were worse in town than in the country one was worse on vacations five varied with their physical conditions, sixteen were given to complete remissions in stuttering, one stutters only in school one stutters only in Polish, one stutters only in speaking to his father, one never stutters while at play, one never stutters with members of his own sex one gets worse at intervals of three or four days, one is markedly worse after sleep even a short nap one is worse after an operation for adenoids and tonsils (undertaken to cure the stutter), one stuttered for three weeks only and so on with such variations for virtually the entire group Among the soldiers six began to stutter with service at the front (five of these began with aphonia), seven were stutterers who relapsed with service at the front, one who had stuttered severely had a complete remission while at the front until he got up into Germany and became homesick, six who had stuttered previously relapsed with service in this country (such as a fight, a runaway horse, and a close shave with an explosion), one relapsed with the draft and one relapsed with influenza Many of these men have trouble at the telephone although they do not have any trouble if the receiver is closed, but begin to stutter immediately when it is opened

If brain congestion or defective auditory imagery or malocclusion of the arch or infected tonsils were the primary cause of stuttering, rather than results or merely accompanying disorders, what part is played by the movement of the hand of a second person in the connecting of the telephone? The only real change is the knowledge of a third person listening over the wire

We must ask, then why every one with this type of temperament and personality when placed in a situation similar to these described, does not break down into faulty rhythm, an over or under motivation of the speech muscle group We believe that there is some fundamental weakness in the motor mechanism but that whether stuttering results depends not only on the degree of this weakness in the mechanism but also on the ability of the individual to protect this mechanism from undue strain It is of interest, and quite significant that of the stuttering schoolchildren studied 51 per cent were found possessed of other speech difficulties as well either substituting one sound for another or initiating the movement with too little tension or with under or over motivation of the diaphragm or vocal cords, resulting in so-called vocal difficulties Often more than one of these difficulties were present in addition to stuttering Among the soldier group only 30 per cent had additional speech disorders and we feel that the presence of stuttering in spite of a stronger speech mechanism may be due to the infinitely greater strain put on the adaptive faculties and the endocrine system by the conditions of the war and service

Another factor which contributes to our belief that there is an underlying weakness of the motor system is the relatively high percentage of stutterers who have been changed from left to right handedness Ballard [4] says that the generally conceded percentage of left handed people in the population is about 3 per cent In the 200 schoolchildren we found 12 5 per cent who were left handed 11 5 per cent of whom were changed for writing, and among the soldiers 17 5 per cent all of whom were changed for writing

There is also the problem of hereditary tendency There seems to be a marked predisposition in the families of these individuals toward defects of speech—not only of stuttering but also the other defects In the

4 Ballard Handword a an Educational Medium New York the Macmillan Company p 138

families of 72 5 per cent of these cases there were defects of speech In 52 per cent of the families there was stuttering, and in 22 per cent there were both stuttering and other defects That this is not primarily a problem of imitation or faulty learning is shown by the fact that many of these patients had never seen the person so affected, for example, the grandparent stuttered, but died before the child was born etc

And back of this also is the problem of family adaptation to environment, a most complicated problem to handle and tabulate The behavior of such families may be divided into several groups A small percentage are of low grade mentality and in this group we have the usual amount of conduct disorder, syphilis and psychopathic conditions There was also 1 5 per cent of insanity But 13 per cent of the families showed neurosis, and 25 per cent nervous instability Of the 47 per cent remaining 15 per cent were unaccounted for, but in 32 per cent the behavior was above average They showed such family groups as contained musicianship of a high order, poets and people of scientific attainments, financiers etc , in other words, where nervous instability had been made to count in favor of society rather than against In the patients themselves the same variation is shown, for in contrast to many of the social failures among them, we have a high percentage at the University of Wisconsin (125 in the freshman class), and many exceptionally talented people These people have adapted partially to their speech difficulty, and adjust well in most respects, but show the typical anxiety states, and the hypomanic temperaments

There is very little relationship between poor health and the severity of the stuttering, but an exact and surprising correlation between social adaptation and the severity of the symptom

The treatment and reeducation of stutterers is in a chaotic condition generally, the work, where it includes drill on particular letter position being actually pernicious, and accomplishing results only where the personality of the worker instills courage or sustains the patient Treatment is usually aimed at the symptom itself, and where relief is given to that the underlying temperamental disability is left untouched That results can be gotten with these patients, when the treatment is directed toward general muscle training plus the adjustment of the individual to his environment, we feel to be shown by the work of Miss Pauline Camp in Grand Rapids, Mich , who was able to dismiss 43 per cent of her cases as arrested, and of my own clinic at United States Public Service Hospital No 37, where 39 per cent were arrested 17 per cent greatly improved, 17 per cent somewhat improved, 2 per cent unimproved, and 25 per cent still under treatment

SUMMARY

We believe the disorders of speech to be due to the lack of ability to adapt emotionally to social situations, or to a faulty motor mechanism either hereditary or acquired We believe that the most worth-while results which are obtained at present are those which aim at the underlying cause and general hygiene, and muscle training, and that training aimed at the alleviation of the symptom alone is pernicious because it obscures the issue and in hysterical cases actually "sets' the disorder

We feel that this problem for so many years left in the hands of quacks and charlatans and untrained people, is most distinctly a medical problem, and that neuropsychiatric training is necessary for the diagnosis and treatment of these patients Nor can we too strongly urge the necessity for training medical students in the value of speech disorders as a significant symptom

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ABSTRACT OF DISCUSSION

DR WALTER TIMME, New York Speech is one of the most complex of the higher attributes of man, and proper speech in order to be proper, must be under the control of the high centers for praxia and gnosis in the cerebral cortex functioning through the different motor and tension tracts involving pathways and ganglions of every level down to the peripheral end-organs In any one of these organs and pathways a lesion, whether an actual physical one or a psychogenic one affecting the cortex and its activities must result in stuttering Hence, only a small percentage of stuttering is due to a disturbance in the peripheral organ of speech the large majority being in the central or the communicating pathways Dr Blanton stated there was frequently an endocrine factor From the researches of Crile it was found that the electrical conductivity of tissue is increased in hyperthyroidism Hence there is in a certain number of cases stammering with hyperthyroidism too rapid an interchange between cortex and peripheral end-organs, with a resulting noncoordination of thought and speech, and in those with hypothyroidism too slow an interchange for the flow of thought, both giving rise to disturbances in articulate speech

DR WALTER B SWIFT Boston Dr Blanton is one of the authorities in speech correction of the Middle West, and anything he says deserves consideration He has definitely located in the cortex the etiology of stammering by saying it is a motor weakness" Up to today stammering has been located in almost every nerve and brain center connected with speech and has been chased even to the subconscious and located there Therefore, to have it put definitely as a weakness of the motor side of our speech apparatus is a new point in this field and must be looked on with due consideration It deserves investigation I think, however if one characteristic of these stammerers be considered stammering can be ruled out entirely of the motor side of speech They can sing without the least trouble therefore it cannot be motor weakness" There is another factor which leads us to locate it in the sensorium It is the stammerer's marked lack in visual capacity In proportion as this is corrected in that proportion do the stammerers recover Dr Blanton *should not waste time considering psychoses* and other conditions that accompany stammering but steady the stammering itself and the visual function behind it If he scientifically repeated our psychologic tests, he would come to the conclusion that normal visual processes are lacking in cases of stammering No research to date has disproved this As to endocrine therapy in these cases I think that this is in the experimental stage and we are not justified in making any claim for its success We should go slow until investigators have found out whether it is any good or not There has been much said about the subconscious etiology of stammering and what some Freudians have 'read into' this condition is entirely uncalled for—mere misinterpretation and rot We tabu decry and do not tolerate Freudianism in speech correction We find no need of that form of mental masturbation

DR MARCUS NEUSTAEDTER New York I should like to have Dr Blanton explain how it is that stammering stops while singing All patients with hypothyroidism that I have seen in twenty-five years are sluggish in their mentality and general motor behavior, and never stammered The quick talker, the fast eater the lightening thinker is the usual stammerer It would be possible to explain stammering by a functional or organic lesion in the synapse, and therefore there is inability for the impulses to produce synchronous reactions into the motor path, and the result is a sort of block and sudden discharge of many impulses simultaneously

DR CHARLES R BALL, St Paul I am sure that stammering may be of psychogenic origin In October, 1918, I visited the La Fauche special hospital in France for shell shock

cases One of the dougboys was at the station having come down to see the train go by, and I asked him the way to the hospital He started to sputter and choke and stammer, but finally brought out the statement that he was going there himself and would show me the way When I got there I found that about two thirds of the patients were stammerers After I had stayed there two or three days, I began to get the sensation of wanting to stammer myself The thing was infectious It seemed as if a wave of hysterical stammering had swept over the whole institution and was beginning to affect me I firmly believe I escaped this affliction only by leaving

DR SMILEY BLANTON, Madison Wis I have given special attention to Dr Swift's visual image theory for two or three years, and I do not feel that he has proved his point All our patients were given imagery tests, and we found no visual imagery defect at all in most of them Any one who has had experience with the war neuroses and the speech disorders occurring in these cases could not but admit that speech disorders might be caused by mental shock or conflict—an hysterical mechanism In saying that there was a motor weakness back of stammering I was merely drawing logical conclusions from the facts found in the study of my cases The fact that a large percentage of stuttering children have stuttering in the family, or that many stutterers have other speech defects, seems to show that there is some constitutional weakness in the speech mechanism of these cases It may be true, as Dr Neustaedter says, that stuttering is due to difficulty at the synapse I feel, however, that the synapsis trouble may be due to emotional strain or conflict, and that if we cultivate mental poise in the patient the synapses will function properly

Clinical Notes, Suggestions, and New Instruments

UNUSUAL OCCURRENCE OF RECURRENT MEASLES DURING CONVALESCENCE AND IN THE COURSE OF AN ATTACK OF SCARLET FEVER

JOSE C CARBALLEIRA M D FORT SILL OKLA
Captain Medical Corps U S Army

That it is possible for a patient suffering from one of the exanthems to develop another of the same group has long been known Although not of daily occurrence, the phenomenon occasionally happens But the recurrence of one of these exanthems from which the patient is convalescing and during an intercurrence of another one of the group, is certainly a novelty

REPORT OF CASE

Private J S, aged 21, white, was admitted to the Station Hospital, March 23 1921, with a diagnosis of scarlet fever which was confirmed on examination of the patient He had not suffered from any of the childhood diseases except chickenpox He was isolated and proper treatment was instituted During the first three weeks of his illness nothing abnormal occurred, he began to desquamate at the end of the first week and the case seemed to be of a rather benign type The temperature fell down to normal and remained so three days after admission April 14, exactly three weeks after admission, the patient had a rise of temperature, the conjunctivae became injected, and he developed a coryza and a frontal headache Two days later a maculopapular rash appeared over his chest abdomen and face, which later extended to his arms and entire body Koplik spots were present and a diagnosis of intercurrent measles was made

Two weeks afterward the measles rash had entirely disappeared and the patient had a second desquamation of the entire skin, still he was kept isolated and was also kept in bed on account of a rapid pulse (from 112 to 124) which now superseded the rather slow pulse that had prevailed during the acute stages of both exanthems The urine examined at different intervals during his illness, was negative in all respects He had no other complications and felt perfectly comfortable with the exception of the naturally expected weakness from a protracted illness

May 21, nine days after the measles rash had entirely disappeared and when there were no signs or symptoms of this disease present, the patient had another rise of temperature and all the common initial symptoms of measles—injected conjunctivae, coryza photophobia, lacrimation Koplik spots and two days later the typical maculopapular rash over the face neck chest and arms—made its appearance With the advent of all these symptoms the pulse of the patient returned to the characteristic slowness of toxicity found in exanthems

At the time this article is written, May 27, the rash is fading out from the face and chest, but still persists over both arms and forearms The patient's temperature is normal and the pulse rate is increasing steadily, desquamation at the soles of his feet still persists, and the patient though weak feels comfortable

COMMENT

So far as I know this is the first instance in which a patient after having passed the acute stage of an exanthem has had a recurrence with all the characteristics of a new invasion

The nature of the rash in this case in both instances together with the absence of involvement of the posterior cervical glands eliminates any possibility of German measles How then, could this reinfection take place under the most rigid isolation?

NICOTIN POISONING WITH RECOVERY *

WILLIAM D MCNALLY A B CHICAGO

Nicotin is one of the most fatal and rapid of poisons, its rapidity being equaled only by that of hydrocyanic acid The commercial preparations, containing from 8 to 43 per cent of the alkaloid nicotin, are used in very dilute solutions as insecticides To the more frequent use as an insecticide in recent years can be attributed the increased number of accidental and suicidal deaths from nicotin The lethal dose of nicotin is given as 60 mg , a much larger quantity has always been found in material submitted to me for examination

The case which I have to report is of special interest owing to the large amount of nicotin taken

REPORT OF CASE

C C a farmer aged 75, was brought to the service of Dr J A Carr Ward 53 of Cook County Hospital, at 9 05 a m Aug 20 1920 in an unconscious condition with a slow stertorous breathing and a gurgling sound in the throat at each inspiration The systolic blood pressure was 110, and the diastolic 74 The temperature was 97 and the pulse 56 The hemoglobin was 90 per cent , the red blood cells 5 000 000 the white blood cells, 10 600

The pupils were equal and contracted, the throat failed to show evidence of corrosive poisons, the face was slightly flushed there was no cyanosis, the color returning well after pressure The breathing was shallow and the excursions were equal The reflexes were present and bilaterally symmetrical

The stomach was washed with water and tannic acid The lavage with plain water was continued until the washings returned clear and the combined washings of about 1 liter were submitted to me for examination. Tests for heavy metals were negative A steam distillation gave a small amount of grain alcohol and an alkaloid identified as nicotin Using the silicotungstic acid method[1] for the quantitative determination of the nicotin I found 0 0355 gm of the alkaloid

A whisky flask found in the possession of the patient held a liquid containing 42 40 per cent of nicotin The brown colored liquid has been mistaken for whisky and he undoubtedly had taken a swallow of it, or enough nicotin to kill several persons

The patient had an uneventful recovery, regaining consciousness shortly after the stomach had been washed His recovery was unquestionably due to early and copious vomiting, and the efficient washing out of the stomach

* From the Department of Materia Medica and Toxicology Rush Medical College

1 McNally J Lab & Clin Med 5 213 (Jan) 1920

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SATURDAY, JULY 30 1921

RECENT STUDIES IN METABOLISM

As a nation, the United States may justly feel some pride in the contemplation of the progress which the study of the problems of nutrition and allied topics has made in this country in recent years It is not long since the medical workers among us were accustomed to turn to European literature as the source of most that was novel and promising in current science, and likewise the younger investigators were wont to find their way across the Atlantic in a search for inspiration to research and scientific wisdom The symposium of papers on metabolism that were presented at the Boston session of the American Medical Association published in part in THE JOURNAL last week and completed in this issue,[1] indicate in a most complimentary way how virile productive and progressive are the scientific forces which have become established on American soil Every practitioner will receive a stimulus to better work as well as a fund of helpful suggestion from the reading of these meritorious papers

After all, the intensive study of metabolism in American laboratories is not as new as it may seem to many whose experience does not antedate the last decade The fundamental work of Atwater and Benedict and their associates in the development of the respiration calorimeter—an apparatus to which the late physicist Dr E B Rosa also made substantial contributions—began a quarter century ago at Wesleyan University It resulted in the splendid demonstration of the applicability of the law of the conservation of energy to the transformations that proceed in the human body as well as to the inanimate world about us Today the practitioner speaks glibly of "basal metabolism" or "metabolic rates" scarcely recognizing how new is the knowledge with which he thus deals and how much of it scientific medicine owes to our own institutions

What governs these mysterious changes which are designated as metabolism? How does an appreciation of their nature and variation concern the physician as well as the physiologist? As Benedict forcefully points out

> That a strenuously active man, engaged in severe muscular work gives off heat is not surprising to any one, but it is seldom fully realized that even with a man in complete muscular repose, such as a bedridden patient the end-results of all the internal glandular and muscular activities incidental to the maintenance of life is *heat* So truly is the heat output determined by the intensity of vital processes that conversely, it may be stated that the level of vital activity may be inferred from the amount of heat produced

It is at length an established fact that the mass of the body cells—the active protoplasm of the organism—and their capacity to oxidize materials determines the intensity of the metabolism To measure this has necessitated measuring the heat produced The exact estimation of this in the human calorimeter is formidable enough for even the specially trained scientist not to mention the less skilled clinical worker It is fortunate, therefore, that the technic of indirect calorimetry has been developed so successfully, as Benedict has indicated If one can measure accurately the carbon dioxid production—or, still better, the oxygen consumption—a very close estimate of the total heat production can be secured To this end much effort has been expended in recent years with the consequent development of various forms of apparatus, good and bad, intended to measure metabolism by the principles of indirect calorimetry

Obviously, the basal metabolism, which has been the subject of numerous comments in THE JOURNAL,[2] will vary with such factors as size and age Hence there has arisen the need of a unit or standard of measurement That body weight is not the real criterion has long been appreciated In his admirable review of the fundamental ideas regarding basal metabolism Lusk[1] has summarized the conflicting views and given evidence for the applicability of Du Bois' height-weight formula at present generally made the basis for determining surface area as the practical unit in the measure of basal metabolism For normal persons between the ages of 20 and 40 the basal metabolism is now predictable with considerable accuracy Variations from the expected normal give indications in many cases of disease conditions so that the pioneer establishment of trustworthy standards, so largely a contribution of American investigators has in turn furnished a method now widely accepted throughout the world for a closer diagnosis of several pathologic conditions Clinically it has thus far found its most important application in the accurate recognition of the presence or absence of that hyperthyroidism which has been defined as an increase in the rate of heat formation due to the presence of an excess of the thyroid hormone in the body Boothby[1] has pointed out that, with dependable information regard-

1 Plummer H S Interrelationship of Function of the Thyroid Gland J A M A **77** 243 (July 23) 1921 Benedict F G The Measurement and Standards of Basal Metabolism p 247 Lusk Graham Fundamental Ideas Regarding Basal Metabolism p 250 Boothby W M The Basal Metabolic Rate in Hyperthyroidism p 252 Means J A Determination of the Basal Metabolism as a Method of Diagnosis and as a Guide to Treatment this issue p 347 Du Bois E F The Basal Metabolism in Fever p 352

2 Basal Metabolism Current Comment J A M A **71** 198 (July 20) 1918 The Measure of Metabolism editorial ibid **73** 110 (July 12) 1919 Applications of Clinical Calorimetry ibid **74** 806 (March 20) 1920 Science in the Medical Clinic ibid **75** 248 (July 24) 1920

ing the basal metabolic rate of the patients, very sharp distinction can be drawn between mild cases of exophthalmic goiter and those conditions described as "effort syndrome," "disordered action of the heart," cardiac neurosis," "neurocirculatory asthenia," etc, which on superficial examination present some of the signs of mild exophthalmic goiter, but in which the basal metabolic rate is normal and which on close analysis can be shown not to be dependent on an excess of the thyroid secretion in the body

Fever is one of the conditions attended with increased basal metabolic rate At the Boston symposium Du Bois [1] showed that this increase in febrile diseases follows van 't Hoff's law of velocity of chemical reactions with temperature changes, it is about doubled for an increase of 10 degrees Centigrade The law of the conservation of energy has been demonstrated by Du Bois to hold good in fever patients in whom we now know the metabolism to respond to a rise in temperature in a manner which closely resembles the chemical reactions in a test tube suspended in a water-bath A rational basis for the fever dietary is now at hand Predicting the normal basal metabolism according to surface area standards we should add, in the words of Du Bois, about 13 per cent for each degree Centigrade above the normal temperature (7 2 per cent for each degree Fahrenheit) This should be increased by 10 per cent in the case of toxic patients with great destruction of body protein, and by approximately 10 per cent in all other febrile patients who are receiving much food, with a further allowance of from 10 to 30 per cent for muscular activity if the patients are restless

The study of the respiratory quotient in various fevers indicates that there are no significant changes in the metabolism of fats and carbohydrates The destruction of protein has long been known to be high in such cases The increased protein catabolism is not, however, in every instance merely a consequence of the increased temperature According to Du Bois it seems to be proportional to the toxemia, since it is excessive in patients seriously ill with typhoid and erysipelas, and comparatively insignificant in chronic tuberculosis patients with the same degree of fever

The widespread interest in the latest contributions to clinical calorimetry was attested by the exceptionally large audience which gathered to hear the papers at the Boston session It must be tempered by the fear, expressed by several of the speakers, lest the promising new technic be made the plaything of uneducated "experts" or the tool of the quack "It is far better," Means [1] said, "to make no metabolism tests than to make them inaccurately" Remembering that the interpretation of metabolism "tests" now exceeds in complexity the actual laboratory technic, those who are interested in the sound advancement of clinical medicine should educate themselves first of all in the fundamental significance of the gaseous metabolism

ANEMIA, IRON, AND BLOOD REGENERATION

The use of iron compounds in the treatment of anemia was common long before the date when the element was discovered, in 1746, to be a constituent of the red blood corpuscles This early iron therapy was essentially empiric The practice gave rise to traditional methods of prescribing iron which have persisted to the present day It would be rash to deny the possible value of iron therapy in anemia even in the absence of convincing scientific experiments to justify the procedure, for long established practices of this sort which have survived the changes of therapeutic customs from decade to decade are more than likely to be found to have some feature of justification when knowledge grows to the extent of disclosing the true situation *Empiricism should never be hastily condemned* nor its dictates rashly discarded Scientific research may properly demand, however, that even empiric procedures shall stand the test of experimental investigation directed toward justifying them

During the latter years the views of pharmacologists regarding the function of administered iron have undergone repeated changes while the therapeutic practice has continued The once popular view of the physiologist Bunge, who recently died in Basle, Switzerland, has been abandoned He argued that organic iron compounds are most serviceable in therapy Animal and plant products which serve as foods contain compounds of iron in organic combination These were assumed to be the really assimilable forms of iron, inorganic salts of the element serving merely to protect the "food iron," which was alleged to be converted readily into insoluble sulphid in the intestine by the action of hydrogen sulphid arising there through putrefactive changes The Pharmacology of Useful Drugs,[1] issued by the American Medical Association, gives a logical statement of the present day view The theory of Bunge, it reminds us, is no longer held by physicians or pharmacologists, but it is still urged by certain interested manufacturers as the basis for their claims for the value of their preparations On this basis is urged the use of preparations of manganese which are employed in anemia, as it is claimed that the manganese unites with the hydrogen sulphid, thus sparing the iron of the foods for absorption One need only remember that iron is absorbed mainly in the duodenum and that there is no hydrogen sulphid in that part of the intestine, to recognize that administration of manganese cannot affect the absorption of iron It is unnecessary to review the literature of a long controversy Today we need no longer argue that iron is assimilable alike from its organic or from its inorganic combinations It is more than likely that in either case ionized iron appears in the intestinal lumen and is absorbed as such

The use of iron in anemia was long justified on the assumption that a shortage of the element occurred in

1 Hatcher R A and Wilbert, M I Pharmacology of Useful Drug Chicago American Medical Association 1915 p 262

the body when the blood lost some of its iron-containing hemoglobin It may be admitted frankly that if there were an actual deficit of iron, that is, if the dietary intake were too small to permit the restitution of the ferruginous blood constituents, administration of the element in assimilable form would seem rational But ordinary human dietaries are rarely highly deficient in iron, and, furthermore, the usual therapeutic doses are large out of all proportion to even the theoretical shortage If, then, the iron is not actually needed as such and if it can no longer be argued to act as a protective agent in Bunge's sense, some other justification for iron therapy in anemia must be sought Hence has arisen the theory that iron salts stimulate the hematopoietic organs in some specific way quite apart from their possible function as structural units in the genesis of red corpuscles The seat of the stimulating activity is ordinarily located in the bone marrow by writers on this subject [2] Muller's investigations [3] are often referred to in defense of this view It is further regarded as likely that iron salts promote growth and metabolic changes in other tissues the improvement in nutritive conditions in chlorotic patients being cited as an illustration

Until recently, most investigators in this difficult field have overlooked the possible rôle of dietary factors in blood regeneration In an elaborate research at the George Williams Hooper Foundation for Medical Research in the University of California Medical School Whipple and Robscheit [4] have studied the possible influence of iron salts and other substances supposedly stimulating regeneration under carefully controlled conditions of feeding The outcome will be disappointing to the empiricists It shows that iron in the form of Blaud's pills is inert when given under controlled conditions in anemia periods under the conditions of these experiments Ferric citrate and the organic "ovoferrin" give no better results Hemoglobin seems to bring about somewhat more favorable responses, but this result need not be attributable to the iron in the compound Again two other "favorites"—arsenic in the form of sodium cacodylate or of liquor potassii arsenitis (Fowler's solution)—were tested and found inert In fact, no drug tested could compare with suitable dietary factors in stimulating a rapid regeneration of hemoglobin during these anemia periods induced by simple hemorrhage One can consequently scarcely disagree with the California investigators that many of the iron preparations commonly prescribed are inert, or, at least much less potent than simple diet factors As they say their carefully controlled experiments give no support to the time-honored custom of administering iron and certain other drugs in conditions of simple anemia The burden of proof now rests with those who claim that any given drug is potent under such conditions There will be something constructive as well as destructively critical in these new researches if they teach a more wholesome respect for the interrelations of dietary factors and the capacity of regenerating the blood

2 Meyer H H and Gottlieb R Die experimentelle Pharmakologie Berlin and Vienna 1921 p 499

3 Müller F Virchows Arch f path Anat 164, 1901

4 Whipple G H and Robscheit F S Iron and Arsenic as Influencing Blood Regeneration Following Simple A VI Negative Influence of Familiar Drugs on the Curve of Regeneration Following Hemorrhage Arch Int Med 2[illegible]

OXYGEN AND MUSCULAR FITNESS

It is a matter of common physiologic knowledge that there are places in which the oxygen supply may be entirely inadequate for well being, and likewise circumstances under which, even in an ordinary atmospheric environment, respiratory distress due to a deficiency of oxygen may arise At high altitudes or low barometric pressures the functions of the human mechanism may be interfered with The essential cause of the disturbances thus arising is lack of oxygen, and the consequent imperfect aeration of the arterial blood with this gas This explanation has become a permanent acquisition of science since the classic work of Paul Bert published in 1878 The call for oxygen comes from the active cells of the tissues in which oxidation takes place Hence, to insure well being, the oxygen pressure in the blood must be sufficiently high to supply the needs of the cell in the brief interval of time that the blood is passing through the capillaries

The physiologic observations made on men and animals living at high altitudes or under reduced atmospheric pressures show clearly that a very marked process of adaptation occurs which renders the mechanism capable of meeting the call of the tissues for oxygen The Manual of the Division of Military Aeronautics of the War Department [1] further states that an aviator must be able to adapt himself physiologically to altitude changes The aviator does not remain at high altitudes long enough to benefit from slow adaptive physiologic changes, therefore his body must be capable of making rapid com[illegible]y changes which will provide the oxygen nee[illegible] tissues He must be able to be[illegible]brupt a[illegible]nges in atmospheric pressur[illegible]out th[illegible]of s[illegible] one or more defin[illegible]e pi[illegible]ns provide for his o[illegible]as aeroplane becom[illegible]o[illegible] tinues to ascend

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1 M[illegible] Service

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Accordingly, Briggs,[2] conducting experiments for the Mine Rescue Apparatus Research Committee in Great Britain on fitness during exertion, has attempted to furnish oxygenated air to persons engaged in heavy tasks It appears that physical work is found by experience to be easier to unfit men when oxygenated air is breathed than when normal air is breathed, but no such difference is to be observed with fit men On an overload, even the fittest man derives benefit from breathing enriched air The benefit of breathing enriched air when doing physical work is limited to air containing about 60 per cent of oxygen Enrichment above that proportion has no effect during exertion even on very unfit persons

Since Briggs' investigations indicate that in contrast with the unfit man, a fit person derives less benefit from addition of oxygen to the air inspired during severe muscular exertion, one naturally assumes some compensatory mechanism in the worker trained for efficiency Pointing out that the lungs of the fit man seem to absorb oxygen more readily from normal alveolar air during exertion, Briggs assumes that this might be due either to some anatomic change which makes simple diffusion occur more readily through the lung epithelium of the fit man, or to active secretion of oxygen inward by the lung epithelium The latter assumption is a revival of the secretion hypothesis championed by Haldane and dismissed by others as untenable For the present, the exact nature of the adaptation produced by physical training and by certain vocations—that is, the nature of physical fitness—remains a physiologic mystery

MORE ABOUT WAR GASES AND INFLUENZA

The cause of death in acute gas poisoning has usually been assigned to pulmonary edema An accumulation of fluid in the lungs is a common manifestation of the acute effects of the lethal war gases, for example, but the elaborate studies of Underhill[3] and his associates have directed attention to other attendant phenomena which unquestionably deserve serious consideration The first stage of the acute gas poisoning is associated with a notable decrease in the concentration of the blood This is quickly followed by the second stage, which is characterized by a rapid concentration of the blood far above the normal level Most of the fatalities occur in this period From a large amount of experimental data it may be concluded that in acute gas poisoning the prominent features include edema of the lungs, a highly concentrated blood and an evident need of oxygen in the tissues In the later stages of gas poisoning the picture presented resembles strongly that characteristic of a pneumonic process

The importance of establishing these claims beyond peradventure lies in the fact that they point the way to the most likely therapeutic procedures As blood concentration means a failing circulation an inefficient oxygen carrier, oxygen starvation of the tissues fall of temperature and, finally, suspension of vital activities it has been proposed that the blood concentration should be maintained as near the normal level as possible by venesection and fluid introduction under carefully controlled conditions Such evidence as was accumulated in experimental therapy by the Chemical Warfare Service of this country before the end of the World War seemed to justify the conclusions just expressed

It now appears that investigations conducted by the German military medical service have substantiated the American findings in several respects Thus, Laqueur and Magnus,[4] who conducted their studies in Berlin, report, in writing of the effects of the characteristic gas phosgen, that the loss of blood plasma diverted to the lungs brings about a very marked concentration of the formed elements of the blood, accompanied by an augmented viscosity of the medium and a retardation of circulation The German investigators specifically point out that the subsequent discharge of tissue fluids into the blood stream is inadequate to produce the requisite dilution As a sequence of all these undesirable features, the tissues experience a lack of oxygen Many organs consequently suffer

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2 Briggs H Physical Exertion Fitness and Breathing J Physiol 54 292 (Dec) 1920 Second Report of the Mine Rescue Apparatus Research Committee 1920

3 Underhill F P The Physiology and Experimental Treatment of Poisoning with the Lethal War Gases Arch Int Med 23 753 (June) 1919 Harvey Lectures 1917 1919 Philadelphia J B Lippincott Company Lethal War Gases New Haven Conn Yale University Press

4 La[illegible] III E[illegible] exper Med

5 Laqueur Experimentelle generkrankung

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2 Meyer H H and Gottlieb R Die experimentelle Pharmakologie Berlin and Vienna 1921 p 499

3 Muller F Virchows Arch f path Anat **164**, 1901

4 Whipple G H and Robscheit F S Iron and Arsenic as Influencing Blood Regeneration Following Simple Anemia VI Negative Influence of Familiar Drugs on the Curve of Hemoglobin Regeneration Following Hemorrhage Arch Int Med **27** 591 (May) 1921

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It is conceivable, however, that in some instances when the person cannot adapt himself to new needs for oxygen, the supply of the latter can be enriched by outside sources To what extent this is possible has often been the subject of discussion When hard muscular work is being done, the consumption of oxygen may rise to many times the resting value As a recent writer has pointed out anew, in the muscles at work there must be a much greater proportional increase of consumption and such an increase can be secured only by an enormous addition to the blood circulation through

1 Manual of Medical Research Laboratory War Department Air Service Division of Military Aeronautics Washington 1918

those muscles Failure to supply the additional blood, whether due to defects in blood distribution or to cardiac efficiency, must, therefore, bring about local anoxemia in the muscles, resulting in a cessation or reduction of the exertion

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The importance of establishing these claims beyond peradventure lies in the fact that they point the way to the most likely therapeutic procedures As blood concentration means a failing circulation, an inefficient oxygen carrier, oxygen starvation of the tissues, fall of temperature and, finally, suspension of vital activities it has been proposed that the blood concentration should be maintained as near the normal level as possible by venesection and fluid introduction under carefully controlled conditions Such evidence as was accumulated in experimental therapy by the Chemical Warfare Service of this country before the end of the World War seemed to justify the conclusions just expressed

It now appears that investigations conducted by the German military medical service have substantiated the American findings in several respects Thus, Laqueur and Magnus,[4] who conducted their studies in Berlin, report, in writing of the effects of the characteristic gas phosgen, that the loss of blood plasma diverted to the lungs brings about a very marked concentration of the formed elements of the blood, accompanied by an augmented viscosity of the medium and a retardation of circulation The German investigators specifically point out that the subsequent discharge of tissue fluids into the blood stream is inadequate to produce the requisite dilution As a sequence of all these undesirable features, the tissues experience a lack of oxygen Many organs consequently suffer

In view of this information, the European workers also have directed attention to the restoration of better blood conditions as an aid in therapy Thus, Laqueur and Magnus[5] discuss the value of saline infusion, but place venesection in the forefront of the effective measures They regard bloodletting as the "sovereign procedure" in combating blood concentration, since they have found it to be followed by prompt dilution of the fluid Even the possible aids of water drinking and rectal instillation are not overlooked in the swiftly arising emergencies of acute gas poisoning Laqueur and Magnus[5] have also recommended the subcutaneous injection of solutions of salts of calcium on the hypothesis—assuredly still debatable—that this element has an effect in rendering capillaries less permeable and consequently retarding the genesis of pulmonary edema Finally, the use of suitable drugs to facilitate the impaired work of the heart and prevent fatal anoxemia is not forgotten

These experiences in the field of the experimental therapy of conditions brought on by the novel weapons

2 Briggs H Physical Exertion Fitness and Breathing J Physiol 54 292 (Dec) 1920 Second Report of the Mine Rescue Apparatus Research Committee 1920

3 Underhill F P The Physiology and Experimental Treatment of Poisoning with the Lethal War Gases Arch Int Med 23 753 (June) 1919 Harvey Lectures 1917 1919 Philadelphia J B Lippincott Company Lethal War Gases New Haven Conn Yale University Press

4 Laqueur E and Magnus R Ueber Kampfgasvergiftungen III Experimentelle Pathologie der Phosgenvergiftung Ztschr f d ges exper Med 13 31 1921

5 Laqueur E. and Magnus R Ueber Kampfgasvergiftungen V Experimentelle und theoretische Grundlagen zur Therapie der Phosgenerkrankung Ztschr f d ges exper Med 13 200 1921

of modern warfare would scarcely warrant such detailed reference in the days of peace were the essential facts not related to some of the diseases of everyday life The similarity between the respiratory complications produced by the lethal war gases chlorin, phosgen and chlorpicrin and those of influenza have been emphasized in particular by Winternitz [6] and his co-workers In each, pulmonary edema is a prominent feature Underhill and Ringer have shown further that in influenza also the blood becomes greatly concentrated This constitutes a factor of the greatest importance in the fatal outcome Perhaps greater progress can be made in the treatment of influenza hereafter if the lessons of the related conditions just discussed—lessons now learned on two continents—are kept in mind in the future management of the reactions induced by the disease

Current Comment

THE POLLUTION OF WATER

At the meeting of the American Public Health Association in San Francisco, an experienced biologist made the startling statement that if present conditions continue the greater part of the eastern United States will be cradled in a septic tank [8] The growing sewage pollution of our rivers and seashore has long been recognized as a problem of serious moment There is one aspect of the subject, however, that is not generally understood House sewage, which represents human wastes may, of course contain the micro-organisms of infectious disease and thus represent a potential menace to those who drink water or eat food that have been contaminated by it But domestic sewage ordinarily contains nothing detrimental to the growth of the aquatic organisms, which help to complete the disintegration of the excreta and which thrive on it Sewage, indeed, supplies a source of plant and animal nutriment in the water as truly as on the soil Nelson reminds us that under favorable conditions a small stream may dispose of the sewage of a relatively large population and the stream in turn be supplied with a constant source of animal and plant nutriment There is a true fertilizing action on the water, with a resultant large increase in the number of the organisms present Since fish and shellfish utilize these plant and animal organisms as food, it follows that the addition of domestic sewage to a body of water will result ultimately in an increase in the amount of human food, in the form of fish and shellfish derived from it, as truly as though the sewage were employed in fertilizing land crops The danger of eating shellfish removed from grossly polluted water thus lies in the presence of pathogenic bacteria rather than in the inert organic matter present in the medium The problem of purification of such products as oysters primarily becomes one of sanitary bacteriology It can be met by avoiding the pollutions, or, if this is not entirely feasible, the food can still be conserved by disinfection procedures But of late the oyster itself is becoming threatened with extinction because of an added kind of contamination represented by the great industries which discharge effluents into the streams reaching the coast Oils acids and alkalis, metallic poisons and other chemical compounds may interfere with all forms of life, whether micro-organisms which themselves aid in the self-purification of our natural waters, or the animals and plants which normally thrive and develop in them In other words, the disposal of industrial wastes has complicated the disposal of human waste, and incidentally an important source of delectable human food is likely to be impaired Something remedial must be done and soon

FLORIDA'S NEW PRACTICE ACT

After several years of effort a new medical practice law has finally been secured in Florida, clearing away the obsolete multiple board arrangement which for many years has caused much confusion in medical licensure in that state The new law establishes a composite board which has full authority to refuse or revoke licenses, to refuse recognition to low grade medical colleges and to protect the public against incompetent physicians The personnel of those appointed on this board promises assurance that the provisions of the new law will be enforced The people of Florida are to be congratulated on the successful passage of this law and it is hoped that they will appreciate its importance and support its vigorous enforcement The only flaw in the act is that osteopaths and chiropractors are exempted from the requirements of the medical practice act since, for the time being their practice is regulated by separate boards In time however, when public opinion has been awakened to the injustice and unwisdom of providing an inferior standard of qualifications for any group of healers, these special boards may be abolished, as they were this year in New Jersey Public opinion will not long uphold an evident injustice, once attention has been clearly called to it

THE DIAGNOSIS OF INTESTINAL OBSTRUCTION

The threatening character of the constitutional symptoms associated with acute intestinal obstruction makes the condition one of unusual gravity for the patient The differential diagnosis is often difficult in the early stages, yet, as surgical intervention often offers the most promising prospect of successful treatment, the early recognition of intestinal obstruction as such becomes highly important Delay long beyond the inception of the symptoms may be fatal The somewhat lively debate that has been provoked among American investigators by the various hypotheses as to the etiology of the peculiarly severe constitutional manifestations of intestinal obstruction or ileus need not be entered on here It has now been well established that when acute obstruction is produced experi-

6 Winternitz Wason and McNamara The Pathology of Influenza New Haven Conn Yale University Press 1920
7 Underhill F P and Ringer Michael Blood Concentration Changes in Influenza J A M A 75 1531 (Dec 4) 1920
8 Nelson T C Some Aspects of Pollution as Affecting Oyster Propagation Am J Pub Health 9 498 (June) 1921

mentally on animals there is in the majority of instances a definite increase in the noncoagulable nitrogen which is likely to be more striking and constant in the cases associated with symptoms of acute intoxication [1] The toxemia appears to be attended with a definite impairment of the excretory function of the kidney, as shown by a decrease in the ratio of urea and sodium chlorid excretion and a decrease in the percentage output of phenolsulphonephthalein in functional tests The validity of some of these findings in the clinic of human disease has been indicated by the studies of several investigators Applying the methods of microchemical analysis of the blood to a series of cases in the Presbyterian Hospital, New York, Louria [2] has found a distinct increase in the urea content of the blood The highest figure reached 170 mg of urea nitrogen in one instance All of the seven carefully selected cases studied were free from any evidence of chronic renal disease, hence Louria believes it fair to assume that the elevation in the blood urea nitrogen was the result of the acute intestinal obstruction Now that chemical blood analysis has become a common procedure in well organized hospital routine, the prospect of its aid in the earlier recognition of acute intestinal obstruction deserves consideration

VITAMIN A AND RICKETS

In a recent issue of THE JOURNAL,[3] attention was directed to the unwisdom of regarding rickets as a disease bound up solely with one dietary factor which may be deficient in the ration Fortunately for the attack on the problems of this malady, which has a widespread incidence, it has become evident of late that some, if not all, of the pathologic characters of rickets can be induced in experimental animals by special conditions imposed by the investigators The discovery of the true etiology of the disease is thus brought nearer One effect of recent studies is to negative the idea at present widely prevalent, owing to the contentions of Mellanby as the results of his experiments on dogs, that the ultimate cause is a deficiency in the diet of "antirachitic factor," a substance which he thinks is probably identical with fat-soluble vitamin A The numerous comparable observations of rats cannot be explained by such a simple hypothesis Furthermore, the researches of Mackay [4] at the Lister Institute in London on growing kittens corroborate on a new species of experimental animal what American workers have already asserted [3] When kittens are fed on a diet deficient in vitamin A, but otherwise theoretically adequate, they become emaciated and finally cease growing Mackay's animals suffered from diarrhea and abdominal distention They gave evidence of unquestionable malnutrition, as might be expected from the deficient character of the diet In fact, the observers regarded the appearance presented as extremely like the clinical picture of celiac disease in children Nevertheless, no evidence of rickets was found in any case postmortem, according to Tozer,[5] who made the examinations The enthusiasm for the modern vitamin deficiency disorders must not be allowed to obscure the complexity of diseases which are at most only in part explained thereby

1 Cooke J V Rodenpaugh F H and Whipple G H J Exper Med 23 717 (June) 1916

2 Louria H W The Blood Urea Nitrogen in Acute Intestinal Obstruction Arch Int Med 27 620 (May) 1921

3 Further Facts About Rickets, editorial J A M A 76 1844 (June 25) 1921

4 Mackay H M M The Effect on Kittens of a Diet Deficient in Animal Fat Biochem J 15 19 1921

5 Tozer F M The Effect of a Diet Deficient in Animal Fat on the Bone Tissue (Rib Junctions) of Kittens Biochem J 15 28 1921

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES NEW HOSPITALS EDUCATION, PUBLIC HEALTH, ETC)

ARIZONA

Physicians' Office Building—As an outcome of the purchase of the Tucson-Arizona Sanatorium by a coalition of physicians the entire building now occupied by the Arizona Hospital will be used as offices for physicians A first-aid operating laboratory for handling emergency cases will be maintained in the building All cases not emergency will be transferred to the new hospital quarters

CALIFORNIA

Chiropractor Convicted—A news report states that L D Treseder chiropractor of San Jose, was recently convicted of violation of the state medical law, on the charge that he was practicing without a license

Anesthesiology Required for Physician and Surgeon's Certificate—The governor has signed Senate Bill 401 which adds anesthesiology hours 32' to the minimum requirements of a physician and surgeon's certificate California is the first state in the Union to make anesthesia a required subject in the medical curriculum

Personal—Surg-Gen Merritte W Ireland conducted the graduation exercises of the nurses at Letterman Hospital San Francisco A reception was given by the officers and women of Letterman Hospital at Red Cross House, July 14, for General Ireland, and a complimentary dinner was given for him at Tates-at-the-Beach by five graduates of the Army Medical School at Washington, class of 1910, who are now stationed at Letterman——Dr F W Hatch state superintendent of state hospitals and asylums, after being employed by the state for twenty-four years, has resigned, the resignation to become effective, July 29, when the government reorganization laws, placing all state institutions under one head and department, also become effective——Dr Donald R Smith has been appointed superintendent of the Mendocino State Hospital, Talmage, to succeed Dr Robert L Richards

DISTRICT OF COLUMBIA

Legislation for Control of Midwives—Senator Ball has introduced a bill into the Senate providing for the regulation of the practice of medicine and midwifery in the District of Columbia The measure provides for the appointment of a board composed of six physicians and three citizens The board is empowered to issue licenses and the practice of medicine or midwifery is prohibited except under this license A fee of $90 is charged by the board for each license The measure was referred to the Senate Committee on the District of Columbia

GEORGIA

Chattahoochee Valley Medical and Surgical Association.—The annual meeting of the association was held July 13-15, at Warm Springs, under the presidency of Dr William C Gewin Birmingham Dr John J Pemberton of the Mayo Clinic, Rochester Minn, and Dr Roy C Long, Asheville, N C, were among the speakers An old-fashioned barbecue was served, July 13 The following officers were elected for the coming year Dr Frank K Boland Atlanta, president, Dr Marcus M Skinner, Selma Ala, vice president, Dr William J Love Opelika, Ala, secretary-treasurer, reelected

IOWA

Personal.—Dr Henry C Eschbach, Albia, has been appointed a member of the state board of health to succeed Dr Walter L Bierring, Des Moines, whose term expired July 1

LOUISIANA

Injunction Made Permanent—Recently the Louisiana State Board of Medical Examiners secured an injunction restraining Otis E Cronk a chiropractor of Alexandria, from practicing in Louisiana without a license A rehearing later, given before the district court at Alexandria, has made the injunction permanent

MAINE

Public Health Meeting—The Maine Public Health Association met July 13 at Augusta under the presidency of Dr Elmer D Merrill Foxcroft and adopted new by-laws which provide for a definite plan of affiliation of the local associations with the state organization and specify that the local association shall elect representatives to the board of directors of the state association The new by-laws also make it possible for posts of the American Legion, labor unions and fraternal organizations to become affiliated with the public health association by the payment of a certain fee, and to have representatives in the association

MARYLAND

Personal—Dr Moses M Savage Baltimore a member of the staff of the Hebrew Hospital, will sail shortly for Europe and will visit Hamburg Berlin and Vienna during his stay abroad

Joint Meeting—A joint meeting of the Baltimore County Medical Association, the Carroll County Medical Society, and the Maryland Psychiatric Society was held, July 20 at the Springfield State Hospital, Sykesville at which time recommendations for the future care of the mentally defective of the state were made by Dr Thomas H Haines of the National Committee for Mental Hygiene, who is in charge of a survey of the mentally defective in Maryland

MISSOURI

North Missouri Medical Association—The association will hold its next annual meeting at Chillicothe, June 19, 1922 Dr Morgan L Clint, Meadville is president and Dr Edward S Smith, Macon, is corresponding secretary

Hospital News—The Callaway County Hospital was opened, June 30, at Fulton It is the second hospital to be erected and in operation under the new law permitting counties to issue bonds for the erection of general hospitals in the counties

New Director of Bureau of Child Hygiene—Dr I D Krauss, of the U S Public Health Service Hospital at St Louis, has been appointed director of the bureau of child hygiene of the state board of health This bureau was established several years ago through the cooperation of the U S Public Health Service and Dr Carlisle P Knight was detailed by the service to act as director Under Dr Knight's guidance the bureau has grown to be one of the most effective divisions of the state board of health, and at the last session of the legislature an appropriation was made that enables the board of health to conduct the bureau under its own auspices Dr Knight has been released from service in the bureau and transferred to another field Dr Krauss assumed charge of the work, July 1

MONTANA

New Officers of Montana Association—At the recent meeting of the Medical Association of Montana, the following officers were elected for the ensuing year president Dr Wyman F Andrus Miles City vice presidents, Drs Charles F Watkins Billings Aloysius N Dolan, Great Falls, and Percy S Rennick Stevensville, secretary-treasurer (reelected) Elmer G Balsam Billings

NEW MEXICO

Personal—Dr Royal B Tracy, formerly neuropsychiatrist for the public health service of New Mexico, has been appointed by the board of the State Hospital for the Insane, Las Vegas, N M, as medical director of the institution to succeed Dr William R Tipton——Dr Alfred A Strauss surgeon, Michael Reese Hospital Chicago, delivered an address on stomach surgery July 14 before the Bernalillo County Medical Society at Albuquerque

NEW YORK

New Research Laboratory—The Cosmopolitan Cancer Research Society has recently been formed in Brooklyn to study cancer and disseminate information as to the nature of the disease, its causes, methods of prevention and treatment The society will cooperate with federal, state and municipal health departments hospitals, medical societies and all organizations through which education and service to the people may be extended It is establishing a complete laboratory for its research work, which will be the nucleus for a much larger institution and the establishment of branches in various cities

New York City

Hospital News—The preliminary campaign to raise $1 000 000 for the Broad Street Hospital began with a luncheon at the Hardware Club, July 22 It was decided to begin the active compaign, August 1 One half the sum will be used to complete the new building, and the remainder will go into the hospital fund

Governor Inspects State Hospital—Owing to criticisms alleging that ex-soldiers who were inmates of the Manhattan State Hospital were not receiving proper care, Governor Miller has inspected the institution He reports that he has found the criticisms absolutely groundless On the contrary he finds that the men are being well cared for and are receiving all reasonable comforts

New York Association for Medical Education—According to an announcement made by its secretary, Dr Otto von Huffman, the Carnegie Foundation has offered to make a donation of $12 000 to the association on condition that the medical profession shall raise $3,000 The raising of this sum will enable the association to continue its activities which have been curtailed of late because of lack of funds This association was organized two years ago to collect information in regard to postgraduate medical instruction and to develop such courses in New York

Intensive Study of Rickets—A special committee has recently been formed, composed of representatives of the bureau of child hygiene of the New York City Department of Health and the Association for Improving the Condition of the Poor for the purpose of formulating a program for the prevention of rickets The study is to be carried on in the Mulberry Health Center, located in the Italian district Broadway, the Bowery, Canal and Houston streets The committee consists of Prof H C Sherman, Prof Mary S Rose Prof Graham Lusk Dr Alfred F Hess, Dr Charles Hendee Smith, Dr Louis C Schroeder, Dr Jules M Blumenthal Dr Jacob Sobel, Mr Bailey B Burritt and Mr John C Gebhart The purposes of the study are (1) to ascertain the prevalence of rickets among the children born of Italian parentage, in those nursed exclusively, and in those fed artificially, (2) to prevent rickets by various measures, such as the use of cod liver oil, sunlight and fresh air, diet, hygiene etc (3) by the use of cod liver oil to cure the condition after it has appeared

OHIO

Gift to Medical School—It is reported that Western Reserve University has received $500,000 from Mr Samuel Mather to be used in the construction of the new medical college building

OREGON

State Deputy Health Officers—As the result of an agreement which has recently been signed by the Oregon state health officer and the district forester forest supervisors in charge of national forests have been appointed to serve without pay as deputy state health officers The duties of these supervisors are to report on sanitary conditions and violation of the Oregon health laws occurring within the national forests to advise violators as to the health laws, if violations are continued the matter is referred to the state health officer

New Medical School Building—The board of regents of the University of Oregon has finally accepted and approved the finished plans for the second new University of Oregon medical school building on the campus on Marquam Hill in Portland The building will cost about $250,000 nearly one half of which has been provided in a gift from the general education board of the Rockefeller Foundation The building will be of reenforced concrete and brick It will be three stories high and will house the administration offices, the library and extension of the laboratory departments and portions of the clinical departments of the school Completion of this building will enable the enrolment of larger

classes which are now limited to sixty each Construction will begin at once and it is expected that the building will be completed in time for the opening of the school year in the fall of 1922

PENNSYLVANIA

Hospital News—The board of directors of the Grand View Hospital, Sellersville, announce that that public institution is clear of debt The hospital is conducting a campaign to raise $75,000

Cancer Clinic—Under the auspices of a committee on cancer of the Medical Society of the State of Pennsylvania, a cancer clinic was held at the Geisinger Hospital Danville The main address was given by Dr Joseph C Bloodgood, Baltimore, on 'Demonstrations and Diagnostic Clinic" Dr Jonathan Wainwright, Moses Taylor Hospital, Scranton, who is in charge of the cancer research work of the Pennsylvania state department of health, was also among the speakers

County Medical Directors—Dr Edward Martin, state commissioner of health, has appointed the following county medical directors, effective July 15 Dr John A Levens, Woodlawn, Beaver County, Dr Carlyle Haines, Sayre, Bradford County, Dr Harold Bruce Boring, Richlandtown, Bucks County, Dr Ray L Stackpole, Butler, Butler County, Dr Alexander H Stewart, Indiana Indiana County, Dr William D Martin, Dunns Station, Washington County, Dr Robert E. Lee McCormick Irwin, Westmoreland County, and Dr Richard O Miller, Erie Erie County

Philadelphia

Personal—Dr Antoinette Russell, who has been doing relief work for the American Friends' Service Committee in Serbia has returned home

To Study Tuberculosis Cure—One hundred Philadelphia physicians made a visit to the tuberculosis sanatorium at Eagleville, July 21, to study at first hand the most modern treatment for tuberculosis The treatment was explained by Dr Abraham J Cohen, director of the sanatorium, who has used it successfully since 1909 In that year the sanatorium was established and of the 3 000 cases it has handled since that year, 82 per cent of those in the early stages have been cured

Improvements on City Hospitals—Construction and supply contracts totaling more than $120,000 for the city's hospitals were signed by Mayor Moore, June 20, and include much additional work on the Philadelphia General Hospital at Thirty-Fourth and Pine streets Nearly $1,000 000 worth of work on the three big city hospitals for general cases, contagious and mental diseases will be started this summer by Dr C Lincoln Furbush, director of the department of public health, as part of his modernization program The money is provided out of the $33 000 000 loan voted by the people last November and contracts are rapidly being placed for the execution of the work

VERMONT

Compensation for Reporting Communicable Diseases—Under an amendment to section 3820 of the general laws passed at the last session of the legislature, physicians will receive from the town 25 cents for each report of a communicable disease made to the district or city health officer However in the case of venereal diseases or tuberculosis, the reports are submitted to the secretary of the state board of health Only one report of a communicable disease during a given period of illness in a family will be paid for Reports must be made as complete as possible on forms furnished by the state board of health

VIRGINIA

Personal—Dr Walter C Klotz, Charlottesville, has resigned as medical director of the Blue Ridge Sanatorium to accept an appointment to take charge of the National Sanatorium Johnson City, Tenn

WASHINGTON

Personal—Dr Frank P Witter, Spokane, has been appointed to the medical license examining board in place of Dr George W Ingham, Olympia, who declined the office because he could not spare the time from his practice——Dr B E Elvin Spokane, was appointed to the state board of health——Dr George Thomas Palmer, president of the Illinois Tuberculosis Association and member of the board of directors of the National Association was the principal speaker at the annual meeting of the Washington Tuberculosis Association, held at Aberdeen, July 28-30

CANADA

Personal—Dr George W Graham, Toronto, has been appointed temporarily to the office of chief coroner for that city The names of some other medical men, four in number, have been mentioned as associates but these have not been confirmed, as there are to be several changes in connection with the holding of inquests and the appointing of coroners in the near future

GENERAL

Willis-Campbell Antibeer Bill Delayed—The Willis-Campbell antibeer bill, which has passed the House and is now before the Senate, will not come up for final vote at once An effort of Senator Sterling in charge of the measure in the Senate to fix a definite date upon which a vote should be taken was defeated

Accept Appointments as Consultants—Drs George Dock, St Louis, Otto Folin, Boston, and Ludvig Hektoen, Chicago, have accepted appointments as consultants to the National Pathological Laboratories to advise on methods used, interpretation of results and ethical policies

A Grant for Research—The American Pharmaceutical Association will have available, after Oct 1, 1921, a sum amounting to about $360 which will be expended for the encouragement of research Investigators desiring financial aid in their work should communicate, before September 1 with Prof H V Arny, chairman, American Pharmaceutical Association Research Committee, 115 West Sixty-Eighth Street, New York, giving their past record and outlining the particular line of work for which the grant is desired

Sweet Bill Passed by Senate—The Sweet bill providing for the establishment of a Veterans' Bureau in the Treasury Department consolidating the War Risk Insurance Bureau, the Vocational Rehabilitation Board, and agencies of the U S Public Health Service dealing with former service men, passed the Senate, July 20 The measure had already passed the House in June Several amendments dealing with minor changes in the bill were added by the Senate Finance Committee The proposed act now goes to conference between the two houses and later to the White House for the President's signature

Increase in Pellagra in the South—The U S Public Health Service has issued statistics on the alarming increase of pellegra in the South The figures show that there may be double the number during the present year as compared with last year and that in some parts of the South the increase will triple previous records In one state where the figures are at hand, 1817 cases developed in May, 1921 in comparison with 677 cases in May, 1920 The situation is said to be due to the failure of the cotton crop making it necessary for the small farmers to resort to salt pork cornbread and molasses as their daily diet without alteration

First Aid Classes in Postoffices—Lee K Frankel, director of public welfare of the Postoffice Department has arranged with the American Red Cross to organize classes in first aid in the postoffices of the country First aid kits at cost will be provided for postoffices and throughout the railway mail service Instructors will be sent around the country to give instruction to postal employees in their use It is also proposed to have classes in home hygiene and care of the sick organized for the benefit of the women employees of the Postoffice Department Postmaster-General Hays has approved these plans of public welfare in the department

American Roentgen-Ray Society Appoints Committee of Safety—At the last annual meeting of the American Roentgen-Ray Society a committee of safety was appointed to give consideration and correct data regarding injuries due to the operation of roentgen-ray apparatus This material will be utilized to determine the cause of accidents and the best means of preventing them Communications relative to such accidents may be addressed to any member of the committee, which includes Drs W D Coolidge Schenectady N Y, Preston M Hickey, Detroit, Henry K Pancoast Philadelphia, George W Holmes, Boston, J S Shearer Ithaca, N Y, or the secretary, Miss Doris Keeler Rockefeller Hall, Ithaca N Y Special outlines have been prepared for recording injuries due to electric shock and those due to roentgen rays

Medical Associations to Advise on Care of Disabled Ex-Soldiers—The Senate Committee headed by Senator Sutherland, investigating agencies dealing with care, treatment and hospitalization of former service men has invited the American Medical Association, the Anti-Tuberculosis Association and the Association of Medical Hygiene, to

appoint committees to assist in the solution of the various questions relating to hospitalization and make reports to the committee The committee has also decided to accept the services of *Myron Adams, of Chicago* and Dr *Thomas* W Salmon of New York, as assistants to Col Cornelius W Wickersham, who is acting as adviser Mr Adams recently conducted an investigation at the hospital at Fort Sheridan, Ill and will examine into the numerous individual complaints reaching the committee Dr Salmon, who is a member of the American Legion committee on hospitalization and vocational education and an expert in the treatment of mental diseases, will be assigned the task of making an examination of conditions in various hospitals

Sheppard-Towner Bill Passes Senate—The Sheppard-Towner Bill for the protection of maternity and infancy was passed by the Senate, July 22 As has been heretofore stated in THE JOURNAL the bill provides for cooperation between the federal government and the states and authorizes the expenditure of $1,480,000 in establishing centers of information on the subject of infant hygiene and maternity The bill is declared by its proponents to be a large humanitarian step and by its foes to be paternalistic and an unwarranted expense to the federal government which will increase from year to year The bill passed the Senate at the last session but failed in the House of Representatives Extended hearings have been held in the House Committee on Interstate Commerce relative to the merits of this bill during the past two weeks and several physicians have given their views to the committee Those appearing before the House Committee were

FOR THE BILL

Hon H M Towner House of Representatives Dr S Josephine Baker Director Bureau of Child Hygiene Department of Health N Y Dr Philip Van Ingen Clinical Professor Diseases of Children College of Physicians and Surgeons New York Dr Ellen Potter Director of Division of Hygiene Department of Health Harrisburg Pa. Dr John A Ryan Director of one Department of the National Catholic Welfare University Washington D C Mr Edward McGrady National Legislative Representative National Federation of Labor Washington D C Dr John A Foote Professor Diseases of Children Georgetown University, Washington D C Maj Gen Charles E Sawyer

AGAINST THE BILL

Mrs Albert T Leatherbee Massachusetts Anti Suffrage Association Boston Dr Charles F Humiston President Illinois State Medical Society Chicago Dr George W Kosmak Representing American Gynecological Society New York Mr H B Anderson Representing the Citizens Medical Reference Bureau New York Dr A. H Quessy Fitchburg Mass Dr Charles E Mongan Representing Somerville Medical Society Somerville Mass

LATIN AMERICA

Trinidad Requests Chaulmoogra Oil—The state department has received a request from the surgeon-general of the Trinidad government for a quantity of the chaulmoogra oil preparation used by the U S Public Health Service in the treatment of leprosy The request came through the American consul at Trinidad and also asked for information on the methods of administering the chaulmoogra oil treatment The request was referred to the treasury department and the state department was advised that the Surgeon-General of the U S P H S will arrange to have oil sufficient for 500 treatments sent to Trinidad together with information for its use

Organization of the Profession in Uruguay—The Sindicato Medico del Uruguay, recently organized to promote the material interests of the profession, ethics, and the welfare generally of the profession and of the public is already busily at work The officers of the consejo arbitral are Drs A Turenne, M Quintela, A Vidal y Fuentes, E Regules L Morquio, A Lussich and J de Salteram As the *Revista Medica del Uruguay* remarks "This list of names needs no commentary' An official bulletin is to be issued Our exchange states that by the efforts of the Sindicato the doors of the daily press of Montevideo have been closed to the advertisements of persons illegally treating the sick These persons have now transferred their advertisements to the country papers, but the Sindicato is on their tracks, and has inserted a notice in a daily at Salto asking all confreres everywhere to send in any advertisements of quacks they may come across The national public health service has awakened to the evils of illegal practice of medicine, and has commissioned Drs Bastos Maimgmou and Girsbaldo to draw up a bill to regulate the practice of medicine, to be presented to the national legislature The Sindicato Medico hails this step as promising great progress for the public health in general if the bill becomes a law

FOREIGN

Radium Found in the Congo—The *Scalpel* of Brussels relates that rumors have been current for a year that minerals rich in radium had been found in the Congo and the Societe de Geologie de Bruxelles now announces this to be a fact Specimens of the minerals found at Katanga have been sold in London by a returning Belgian colonist

Personal—The graduating classes at the University of Palermo presented a souvenir gold medal to the professor of surgery and the professor of internal medicine, Tricomi and Giuffre——A French society "for encouragement *du bien*,' recently awarded a civic crown to the Institut Pasteur at Paris, and presented it to Dr Roux as the representative of the institute

Association for Research on the Treatment of Nervous and Mental Diseases—As already mentioned, *June 4*, the most prominent neurologists and psychiatrists of the Netherlands have started a movement for more thorough study of treatment of nervous and mental diseases now that the progress of medicine has revealed the causes of many of them They are appealing for financial support, offering membership in the Association for Research on the Treatment of Nervous and Mental Diseases for 10 florins a year or a single sum of 250 florins, or associate membership for 5 florins a year or for life for 100 florins The secretary is Dr B Brouwer, Koninginnenweg 170, Amsterdam Dr Ariens Kappers, Amsterdam, is the president, and the appeal is signed by ten others, including Dr W Storm van Leeuwen and eight professors of nervous and mental disease, from Wertheim Salomonson of Amsterdam to Winkler of Utrecht

The Congress Week at Strasbourg—The week including Oct 3 to 5, 1921, is to witness at Strasbourg the meeting of the Twenty-Fifth French Congress of Medicine, the Thirtieth French Surgical Congress, the third annual meeting of the Societe d'Orthopedie and the Twenty-First French Urology *Congress The Presse Medicale for July 6 has a special* supplement devoted to Strasbourg and the data in regard to these gatherings The medical and surgical associations hold a common session the first day to discuss antianaphylaxis as presented by Widal in addition to reports on the heart, lungs and digestive tract The main topics for discussion at the surgical congress are traumatic epilepsy, vaccine therapy in joint disease, and remote results of treatment of mammary cancer The orthopedists are to discuss arthrodesis of the foot ankylosis of the knee and nonoperative treatment of congenital luxation of the hip joint, and the urologists, anesthesia in the *urinaires*

The American Nurses Memorial in France—The laying of the cornerstone of this memorial, on French soil, at Bagatelle a suburb of Bordeaux, was mentioned briefly on page 294 It is to be a model home for the nurses of the Florence Nightingale Training School for Nurses at Bordeaux Our French exchanges comment appreciatively on it and give considerable space to the ceremony The *Journal de Medecine de Bordeaux* gives illustrations and the long list of American *and French notabilities present, Admiral Magruder and the* staff of a gunboat in the harbor the French government, the city the navy etc, being represented by special delegates A French and an American military band assisted in the ceremonies and the bugles gave the *Salut supreme* The memorial is dedicated to the 284 American nurses that fell on the field of honor Our exchange quotes the final dedication of the message from Miss Clara D Noyes, president of the American Nurses Association, saying it should be placed over the door of the school It is quoted as follows "En souvenir de nos camarades tombees au champ d'honneur nous, gardes-malades des Etats-Unis d'Amerique, dedions ce monument commemoratif—l'Ecole Florence Nightingale destinee a elever le niveau de l'education des gardes-malades —a la France, a l humanite The money was collected by the efforts of the three organizations of nurses in the United States The land was presented to the Protestant Hospital for the purpose by Mlle Elisabeth Bosc

Deaths in Other Countries

The *Wiener klinische Wochenschrift* brings word of the death of Dr **Otto Zuckerkandl**, professor of urologic surgery at Vienna His "Atlas and Epitome of Operative Surgery is a familiar textbook and he is one of the group of six urologists that publish the *Zeitschrift fur urologische Chirurgie*, now in its sixth year as the continuation of the *Folia Urologica*——The death is also reported of Dr von Schjerning, surgeon-general of the medical department of the German army aged 68, a leading figure for many years in military and medical gatherings, and writer on public health

matters from the military standpoint——Dr A Chervin, director of the Institute for Speech Defects, at Paris, he died while on a mission to Spain——Dr J L Martin, honorary inspector-general of the services d'hygiene of the cit of Paris, and for many years the editor of the *Bulletin de l Académie de Médecine* although he was not a member of the academie——Dr Rouby, senator from la Correze and Dr G Chapuis, senator from Meurthe, France——Dr Secheyron, a leading surgeon of Toulouse

Government Services

Medal Awarded Lieutenant-Colonel Gilchrist

The distinguished service medal has been awarded to Lieut-Col Harry L Gilchrist, Medical Corps, at present a medical officer in the office of the chief of chemical warfare service for exceptionally meritorious and distinguished service while colonel of the Medical Corps, serving as chief of the delousing and bathing services of the American Expeditionary Forces By superior administration and efficiency he contributed materially to the success achieved by the Army at the ports of Brest, Bordeaux and St Nazaire, in the return of the American Expeditionary Forces to the United States Lieutenant-Colonel Gilchrist delivered a series of lectures during the week ending July 16, on the results of chemical warfare on personnel, from a medical officer's standpoint, before the students of the Medical Field Service School at Carlisle Pa

Medical Reserve Officers and Care of Disabled

Information has been given out at the office of the Surgeon-General of the Army that no medical reserve officers will be called into active service in the near future to take care of War Risk Insurance Bureau patients The forty-four reserve officers already on duty with the regular medical officers are sufficient to supply the present demand An allotment of funds from the War Risk Insurance Bureau to the War Department has been made, however, and the money is to be used for the pay of officers and nurses that may later be called into active service Unless, however, the hospitals under the control of the War Department are called upon to care and treat additional former service patients, no change will be made in the present situation as regards medical reserve officers

Improvements at Dawson Springs Sanatorium

Awards of contract for the construction of thirteen additional buildings of fireproof material at the Dawson Springs Sanatorium, Dawson Springs, Ky, have been made by the Secretary of the Treasury Algernon Blair of Montgomery, Ala received a contract for $800,000 and the Forbes Manufacturing Company, Hopkinsville, Ky, was given a contract for $196,225 The sanatorium at Dawson Springs is expected to cost the government over $2 100 000 It will be a complete tuberculosis sanatorium with accommodations for 500 patients Completion is guaranteed by the contractors within six monhts

Retirement of Colonel Wadhams

The War Department has placed Lieut.-Col Sanford H Wadhams M C, U S Army, on the retired list on account of disability incident to the service Colonel Wadhams recently has been stationed at the general staff college Washington Barracks He is from Connecticut and entered the Army as an assistant surgeon in October, 1900 During the World War he served as a colonel, Medical Corps, of the National Army, and was awarded a distinguished service medal for exceptionally meritorious services

Transfer of Training School

The Naval Hospital Corps Training School formerly conducted at Great Lakes Ill, has been transferred and merged with the school which has been maintained at the Naval Training Station, San Francisco About 300 men were transferred with the school Capt Charles St J Butler has been transferred from the Naval Hospital Great Lakes, to command the Navy Medical School at Washington D C

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 4, 1921

The Protection of Roentgen-Ray Workers

As stated in THE JOURNAL, April 21, p 1181, on the death from aplastic anemia of Dr Ironsides Bruce, roentgenologist to Charing Cross Hospital, a committee was formed to consider the dangers of roentgen-ray workers and how to avoid them This consisted of Sir Henry Rolleston, chairman, Sir Archibald Reid, St Thomas' Hospital, Dr Knox, Dr Horrison Orton St Mary's Hospital, Dr Gilbert Scott, London Hospital, Dr Mottram, Radium Institute, Dr Kaye, National Physical Laboratory, and Mr Cuthbert Andrewes The honorary secretaries are Dr Stanley Melville, St George's Hospital and Professor Russ, Middlesex Hospital The report has now been issued It lays stress on the danger of overexposure to roentgen rays and radium, but states that these can be avoided by efficient protection and suitable working conditions The effects to be guarded against so far as known at present are (1) visible injuries to the superficial tissues (skin, etc) which may result in permanent damage and (2) derangements of internal organs and changes in the blood These are especially important, as their early manifestation is often unrecognized As general precautions, it is recommended that not more than seven working hours a day should be undertaken Sunday and two half days off duty each week should be spent, as far as possible, outdoors An annual holiday of one month or two separate fortnights is also advised Sisters and nurses employed as whole-time workers in roentgen-ray and radium departments should not be called on for any other hospital service A primary precaution in all roentgen-ray work is to surround the roentgen-ray bulb as completely as possible with adequate protective material, except for an aperture as small as possible for the work in hand In screen examinations as in examinations for broken bones, it is advised that an equivalent of 2 mm of lead should surround the bulb The fluorescent screen should be fitted with lead glass equivalent to not less than 1 mm of lead Practical difficulties militate against the recommendation of a greater degree of protection Between the operator and the roentgen-ray box there should be a traveling screen of material equivalent to not less than 2 mm of lead, and protective gloves of lead rubber lined with leather, ought to be worn Even so, all manipulations should be reduced to a minimum A minimum output of radiation should be used with the bulb set as far from the screen as in consistent with efficiency, and screen work should be as expeditious as possible

Similar precautions are suggested for roentgenographic examinations In cases in which cubicles are used for the work these should be well lighted and ventilated preferably by means of an exhaust electric fan in an outside wall or ventilation shaft The controls of the roentgen-ray apparatus should be outside the cubicle The walls of the cubicle should be of material equivalent to not less than 2 mm of lead and its windows to lead glass of equivalent thickness In the case of apparatus to be used for deep therapy, giving voltages greater than 100 000, small cubicles are not recommended A large lofty, well ventilated and lighted room is to be provided The bulb should have not less than 3 mm of lead surrounding it, and a separate enclosure is required for the operator situated as far as possible from the roentgen-ray bulb All controls should be inside this enclosure the walls and windows of which ought to be of material equivalent to not less than 3 mm of lead These recom-

mendations hold good also for roentgen rays used for industrial and research purposes The floors of the rooms should be of wood, cork or rubber, and existing concrete floors should be recovered with one or another of these materials Stout metal rods should replace wires All metal parts of the apparatus and room should be efficiently earthed Ventilation is regarded as of great importance The roentgen-ray room should not be below ground level Artificial ventilation is necessary in most instances, for, with very high potentials, so-called coronal discharges are difficult to avoid, and these produce ozone, and nitrous fumes, both of which are prejudicial to the operator Dark rooms should be capable of being opened up to sunshine and fresh air when not in use The walls and ceilings of these rooms "are best painted some more cheerful hue than black"

Radium in quantities up to 1 gram, in whatever form, should always be handled with forceps and not with fingers It should be carried from place to place in long-handled boxes lined on all sides with 1 cm of lead Manipulations should be as rapid as possible Radium should be stored in an enclosure, the wall thickness of which should be equivalent to not less than 8 cm of lead In the preparation of radium emanations, rubber gloves should be worn and care taken against the escape of the emanations The room ought to have an exhaust electric fan In view of the varying susceptibilities of workers, blood tests should be carried out every three months, so that any tendency to anemia may be noted

A New Roentgen-Ray Apparatus

The West London Hospital announces the possession of a new roentgen-ray apparatus, the design of a Bavarian roentgenologist and the only one in England which makes use of rays of a wave length not hitherto employed The current is of a voltage greater than 200,000 It is expected that with this new apparatus double the number of cures of cancer possible in the past will be obtained The tube gives the highest penetration yet achieved

Anthrax and Disinfection of Horsehair

The departmental committee which has been inquiring into the disinfection of horsehair has reported to the home office that there is danger of anthrax infection from Russian, Chinese, Siberian and Asiatic horsehair generally Large quantities of drawn hair (partly manufactured hair) are now imported from China, and consignments of shaving brushes made from infected hair are arriving in this country The satisfactory disinfection of such prepared hair and of shaving brushes is impracticable, while the danger to users is great Only two courses are possible (1) total prohibition of the import into this country of any manufactured or partly manufactured hair, and of goods composed or partly composed of foreign horsehair or goat hair, or (2) the establishment in the countries from which such goods are imported, of disinfecting stations under the control of a central authority invested with power to enforce disinfection of the raw hair before manufacture This is a matter of international concern Materials similar to those which cause anthrax in this country are, however, used in other countries, and it is impossible to believe that the people of this country alone are susceptible to the disease The committee has unofficial information of outbreaks of anthrax among human beings in China, India, Constantinople and elsewhere The committee states that the process devised for disinfection of wool is suitable as a method for the compulsory disinfection of horsehair

Professional Secrecy

The case of a physician who attended a patient at a venereal disease clinic and was compelled, by order of the judge, to give evidence in a court thus violating both the general obligation of professional secrecy and the regulations of the clinic, was reported in a previous letter The matter has come before the council of the British Medical Association, which has passed a resolution that it "has learned with great regret of the position created by the recent decision of a judge that the medical officer of a venereal disease clinic must give evidence in a civil case as to the medical condition of a patient under his care, thus violating the confidence between physician and patient and the direct undertaking given by the Local Government Board that all proceedings at such clinics should be absolutely secret and confidential" In drawing the attention of the ministry of health to these facts the council urged that such legislative steps be taken as would render such an occurrence impossible in the future It has also asked the minister of health to receive a deputation to discuss the whole question

Filariasis Expedition to British Guiana

An expedition sent to British Guiana by the London School of Tropical Medicine to investigate filariasis has been working there since the middle of April Prof R T Leiper, the well-known helminthologist director of the helminthology department of the London School of Tropical Medicine, is in charge of the expedition, and the members include native physicians of the Egyptian government service As there is evidence that filariasis is a house infection, the expedition has engaged in a house-to-house visitation in Demerara, the capital of British Guiana A kind of mosquito census is being taken to ascertain the proportion infected Another object of the expedition is to ascertain what species act as host to the filariae It was originally arranged that the expedition should last six months At the suggestion of Sir Patrick Manson it is proposed to visit certain West Indian islands, taking one such as Barbados, in which the attack rate is high and another, such as Grenada, in which it is low By comparing the circumstances in the two islands it is hoped to throw light on the conditions that favor the disease

The Color Bar

Though it would be going too far to say that racial prejudices do not exist in England, there certainly is no color bar However in South Africa, the Trained Nurses Association has decided to exclude a colored woman who is trained and holds a certificate qualifying her for membership, and to amend its constitution so as definitely to exclude colored and native nurses The *Hospital* (a nurses' journal published in London) "regrets to learn this decision"

Art as a Solace in the Ward

It seems incongruous, perhaps, that the Arts League of Service, which stands for modern movements in art, should give its entertainment in a hospital ward to patients who being classed as incurable, are out of the current of life's progress The action is, however quite in accordance with the aim of the league—to "bring art into everyday life"—and this could hardly be better carried out than in solacing sufferers Believing that art is the joy of life the Arts League of Service has taken it to the cancer ward of the Middlesex Hospital, to cheer the clouded lives of its incurable inmates Science has done all it can do for them Art steps in and takes them away for a while from their hopeless groove to a happy world of color and sweet sound and joyous movement It was interesting to hear from their own lips how much they liked the fine old folk songs and dainty Elizabethan ditties sung and acted in picturesque costumes (designed by artists), and the graceful Greek expressionist dancing "It was so happy and so restful, just what we could enjoy" was the verdict The entertainment was one

of a weekly series arranged by the Dowager Lady Brassey for the patients in the Middlesex Hospital Its success suggests new possibilities for art, whose place in the life of the nation is now being greatly discussed Why should it not take a definite part in the work of the hospital?

PARIS

(From Our Regular Correspondent)

June 24, 1921

Death of Prof Jean Fabre

Dr Jean Fabre, professor of clinical obstetrics at the school of medicine of the University of Lyons, died recently in Paris at the age of 55 Fabre was born in Lyons in 1866 was appointed obstetric surgeon to the hospitals in 1901, and three years later succeeded Fochier to the chair of clinical obstetrics We are indebted to him for his Atlas of Normal Anatomy and the Pathology of Pregnancy, a compendium on obstetrics, also for a series of works on the innervation of the uterus albuminuria in pregnancy, etc He was a supporter of the institution in Lyons called the Gouttes de lait and also devoted his time and energy to consultations for nurslings in the tenement quarters of his native city Since 1919 Fabre had been a corresponding member of the Academy of Medicine

Mental Derangement and Divorce

Two deputies, Georges Simond and Andre Tardieu, have presented the draft of a law giving certain courts authority to pronounce the dissolution of marriage contracts in cases of mental derangement in the husband or wife They mention the fact that insanity constituted a cause for divorce in the law of 1792 They believe that it is a benefit to society to dissolve such unions as are inevitably destined to remain unfruitful, and thus to make possible new marriages from which good results may be anticipated as regards the repeopling of France However, since divorce suggests the idea of some offense having been committed, the dissolution of marriage and not divorce is entailed by mental derangement of husband or wife, for the reason that one or the other is incapable of performing the obligations of marriage, which is a contract The dissolution of the marriage contract should not, however, occur unless it is an established fact that the spouse afflicted with mental derangement is incurable That is why serious justification must be required of any one who demands of a court the dissolution of marriage an internment of the patient for more than three consecutive years in a hospital for the insane, certified by the superintendent of the hospital for insane and a certificate of the medical director stating that mental derangement seems incurable On the other hand the proposed bill includes a number of paragraphs inserted with a view to safe-guarding the interests of the insane person and to determining the manner in which the dissolution of the marriage contract shall affect the disposition of the property of the husband and wife concerned

Social Hygiene in the Liberated Regions

Various features of social hygiene (female inspectors visiting nurses dispensaries, vacation colonies) have been organized in nine departments by the minister of liberated regions On account of a lack of financial appropriations, these services are threatened with failure The Commission d'hygiene sociale de la ligue civique of which Dr Roux director of the Pasteur Institute, is president expresses the wish that instead of being abolished, these services may be strengthened and their usefulness extended by the diversion to their needs of the $2 000,000 donation made by an American citizen Mr Frank H Bull The Ligue civique hopes that instead of a new society being formed to handle these funds, an autonomous bureau of social hygiene may be organized having judicial authority to accept this donation and others of a similar nature that are sure to be received from France and foreign countries, and controlling also the disposition of subsidies granted by the central government, the departments and the communes Such a bureau would insure the continuation of services that are indispensable in order to repair the damage done to the health of the inhabitants of the liberated regions, and to offset the injuries inflicted on the children who have been the victims of the consequences of a long foreign occupation

BELGIUM

(From Our Regular Correspondent)

LIEGE, June 22, 1921

Justice and Legal Medicine

The sixth congress of Medecine legale de langue française was held May 23-26, at Liege and Brussels, under the presidency of Messieurs Heger-Gilbert and Stockis As one important result accomplished, attention was called to the important influence that the activities of medicolegal experts and criminologists have had on legislators and legislation In fact, even the magistrates present at this congress acknowledged the incompleteness of existing laws, which recognize only two classes of delinquents, the normal and the insane Holvoet, the royal solicitor, chose for the subject of his address The Criminal Code in Relation to Abnormal Subjects He proposed adding three new articles to the criminal code one dealing with delinquents under 25 years of age whom a judge would be permitted to turn over to the care of a governmental prison-school, the other two articles dealing with abnormal subjects who constitute a social danger and who may be placed in a special establishment until such time as there shall be reason to believe that their criminal tendencies have been overcome This report which is well worked out, proposes the introduction of the indeterminate sentence for abnormal subjects

Prisons and Anthropology

At the same congress, Dr Vervaeck presented an interesting report on the work of the superior council of prisons and the anthropologic service, in which he expressed the conviction that the individualization of penalties would be established sooner or later, and that, as he and his co-worker Dr Heger-Gilbert have proposed, the organization of prison labor would in the near future, come to be regarded as the best means of bringing about a normal regeneration of delinquents By a process of selective examination, which could be carried out in the psychiatric annex, the bad elements incapable of adaptation to social conditions would be separated from those more susceptible of regeneration The usefulness of psychiatric annexes was unanimously accepted In these 'prison retreats" the psychiatrist will be able to ferre out the abnormal subject and to give him the needed treatment Prisons for abnormal subjects will doubtless furnish a solution of the vexatious problem of lessened responsibility due to abnormal mental states

New Law Concerning Abnormal Children

The recent enactment of a law having for its purpose the suppression of the abuse of home detention of abnormal children is worthy of note All abnormal children who are capable of being educated but who are not adapted for the special courses of instruction for backward children organized by the communes will be admitted to special schools for the period of their education all the expense of which will be borne by the government To prevent abuses arising from this extension of the privilege of the use of public funds the legislature has established in each province an

administrative board of supervision and control composed of psychiatrists and pedagogic specialists It will be the duty of this board of supervision to inquire (1) whether home detention is necessary, (2) whether detention at home is feasible, that is, whether the family is able to give the subnormal child necessary care and supervision, and (3) whether detention as actually carried out is effective, that is, whether he is properly cared for and watched over

Psychiatric Clinics in Universities

In spite of repeated demands presented more particularly at the bar of the Societe de medecine mentale, not a single suitable psychiatric clinic has been established at any of our universities A committee on organization has been created for the purpose of promoting the establishment of an intercommunal psychiatric clinic in Brussels We may hope that the labors of this committee will bear fruit, owing to the influence and the organizing ability of Prof A Ley Unfortunately, there is no prospect as yet of similar institutions being established in the state universities

International League Against Tuberculosis

By virtue of a resolution passed by the Belgian National League Against Tuberculosis, a prize of 500 francs will be offered each year for the best work submitted on the subject of tuberculosis

PRAGUE

(From Our Regular Correspondent)

July 8, 1921

Strike of Health Insurance Physicians

The strike of the medical officers of the insurance associations is still progressing The central organization of Czechoslovak physicians has declared that the strike is complete throughout the whole republic They state that the physicians are well pleased because they are not so overburdened as they used to be and that they make more money The associations have offered an increase of 50 per cent in fees beginning July 1 It seems that the physicians would be satisfied with this increase in case it should be granted to them beginning Jan 1, 1921 It is probable that the strike must be settled soon in some way or another, because the special funds for strike purposes of the associations are exhausted

Child Welfare Clinics

The American Red Cross through its representative, Dr H O Eversole of Los Angeles, is organizing medical and social child welfare clinics in Czechoslovakia A central committee including the representatives of both the ministries of public health and social welfare and all private organizations working in the field of child welfare has been created This committee will advise Dr Eversole in carrying out his program and will finally take over the work Twenty-two child welfare centers in each of the governmental districts are being considered The center will be highly organized, including a laboratory with a physician in charge and social workers and public health nurses attached The centers will be operated for the first few months by Americans, who will train local workers to take them over later on Dr H O Eversole has spent two and a half years with the Czechoslovakian legions in Siberia as the representative of the American Red Cross and has many good friends among the leaders of the new republic

Conference on Venereal Diseases

In the fall of 1921 a mid-European regional conference on venereal diseases will be held in Prague It will be one of the series of regional conferences which are being organized through the League of Red Cross Societies all over the world and of which the Pan-American conference in Washington, D C, last fall was the first Poland, Austria, Roumania, Jugoslavia, Greece and probably Hungary will send representatives to Prague, where the Czechoslovak Red Cross will be the host of the delegates It will be the first international after-war congress in which all the nations of this war-stricken corner of the world will take part

Quinin as a Prophylactic Against Puerperal Infection

In the *Journal* of Czechic physicians, Dr Chmelar publishes a summary of his experience in rural practice during a period of twelve years During that time he attended 351 confinements, some of them under conditions conducive to sepsis Among all these cases no serious puerperal infection developed when he gave 4 or 5 grains of quinin in the first period of labor, and for the five following days the same dose two or three times a day He believes that this treatment represents a very reliable prophylactic measure against puerperal infection, and recommends it especially for country practice, in which the physician has to work sometimes under very difficult conditions

BERLIN

(From Our Regular Correspondent)

June 12, 1921

Treatment of Diabetes

At the recent Wiesbaden Congress of Internal Medicine, a very interesting discussion occurred on the treatment of diabetes during which some of the more important experiences gained in the war came up for consideration The fact that the two prominent diabetes investigators, von Noorden of Frankfort-on-the-Main and Minkowski of Breslau, presented the opening papers on the subject lent particular interest to the discussion In the opinion of von Noorden, all diabetics who have never received systematic treatment or who have been treated by half-way measures should be subjected to a spare diet, after a period of which they may be gradually accustomed to a more liberal permanent diet, which, however, should be interrupted by short periods of a highly restricted diet The period of strict diet takes the place of the yearly trip to Carlsbad or other resorts The strict, carbohydrate-free diet is now never employed as a permanent diet It should, however, still be used as a form of conservation treatment but with further limitation of the protein content This feature finds its expression on the so-called vegetable days Von Noorden thinks that many investigators have too great a fear of an excessive fat intake especially when the other substances are likewise present in the food Von Noorden distinguishes between a strict diet that is rich in protein and one that is poor in protein The strict diet that is poor in protein should not be recommended for more than five or six days at a time To prevent injury to the patient, additional protein will then be necessary, but the protein may be increased only in the absence of carbohydrates Especially in mild cases, strict diet is to be recommended Once a week a carbohydrate day (preferably fruit) can be introduced, which should be followed by a vegetable day In this manner we shall prevent protein metabolism from becoming excessive In the more severe cases, oatmeal days or something of that nature should be interposed In dealing with emaciated diabetics with cardiovascular symptoms, the change from a strict diet poor in protein to a strict but protein-rich diet may have a very salutary effect and may even save a life In all cases characterized by acidosis, an interposition of fast days ('Sundays for the organs," as he terms them) is desirable The Allen procedure was discussed and the opinion seemed to be that it had brought us nothing essentially new It is important, during the fast days, to keep the patient in bed with nothing to

occupy his mind There are some cases in which the final outcome depends to a great extent on finding a means of checking the overactivity of the sugar-forming mechanism In such cases a strict application of Allen's procedure with its extremely limited diet (4 calories per kilogram of body weight) is advisable Kolisch proposes and defends the following hypotheses (1) Carbohydrate tolerance increases in proportion as the protein content decreases, (2) animal protein is particularly harmful, and (3) the diabetic cannot handle as many calories of food as a normal person Though it may not as yet have been proved, it is at least correct that all overfeeding is injurious The various carbohydrate cures" that are based on von Noorden's oatmeal days were discussed The use of burnt sugar (caramel) denotes progress Falta's "flour-fruit cure has certain advantages in connection with prolonged carbohydrate "cures" We must use the old regimen in connection with these "cures," and vegetable days must be introduced before and after The effect of carbohydrate days is not the same on all diabetics It will be determined to a certain extent by the relative amount of protein in the diet The interrelationship between the protein and the carbohydrates in the diet of the diabetic must be the subject for further study Also with reference to the permanent diet the same principle holds true, that an excess of protein in the diet has a bad effect on carbohydrate tolerance

The advocacy of a permanent diet worked out on the basis of averages has been clearly shown to be unwarranted and must be replaced by a regimen that takes account of needed changes in the diet Von Noorden is inclined to doubt the wisdom of continued protein-poor diet and thinks that the strength of the patient and his potential energy are manifestly increased by the introduction of certain days with a strict but protein-rich diet This does not hold if coma threatens Finally, the conditions under which carbohydrate "cures' should be employed were discussed Von Noorden thinks that carbohydrate days are needed in all except very light cases The condition of most diabetics has a tendency to become worse and we can be fairly content if we can preserve the status quo Even in severe cases the disease can sometimes be brought to a standstill for a time by the use of Falta's procedure However, patients who are doomed to die within a very short time should not be tormented by a strict diet A slight acidosis in von Noorden's opinion is not always of such bad import, and patients gradually get used to it In such cases von Noorden introduces variations by prescribing days with ordinary strict diet then days with an increase of carbohydrates but with only a small quantity of protein then vegetable days and carbohydrate days Unless the nature of the acidosis is such as to contraindicate it, a day of strict but protein rich diet should be interposed As a rule, the diet remains protein-poor In this manner it is often possible to attain a satisfactory condition of metabolism Von Noorden disapproves of using large quantities of sodium bicarbonate

In his discussion of the subject, Minkowski emphasized the fact that in spite of his different theoretical point of view he did not differ materially from von Noorden in the practical aspects of the question He is of the opinion that it is not so much new facts as it is new terminology that creates the impression that there has been an upheaval in the field of diabetes therapy He would not attempt to deny that in certain cases good results can be secured with carbohydrate cures' and fasting cures But the problems and the goals to be reached by treatment are not essentially different from what they have been the abolition of hyperglycemia and the increase of tolerance for carbohydrates That, along with the limitation of the carbohydrate intake, a reduction of the protein intake, and also of the total calory content should be brought about, has been a teaching of Naunyn and his followers for some time past The more recent observations have only shown that, in some instances we can go much farther with the reduction of the protein intake and the diminution of the caloric value of the food than we formerly thought was possible, and that, in this manner a lasting improvement in the whole situation as regards metabolism can be effected in certain cases In principle these facts do not change anything with respect to the aim of conservation therapy, so long as we do not go beyond a certain limit in adjusting the amount of carbohydrates that may be safely added when the protein intake is restricted That is certainly the case as regards the Falta 'flour-fruit cure for which the term "carbohydrate cure" is misleading since in reality, a marked restriction of the protein intake is the principal feature Carbohydrate "cures' in which neither the injurious effect of hyperglycemia nor the conservation of the damaged function is considered are reprehensible

Dietaries which, through restriction of the protein intake make possible the ingestion of a certain quantity of carbohydrates are principally needed in severe cases with acidosis in which the use of oatmeal has proved efficacious in that it prevents the formation of ketones in the urine We do not need to ascribe a specific effect to the oatmeal in this connection In moderate cases by alternating between periods of protein-poor diet, with a certain amount of carbohydrates and periods with carbohydrate-free and protein-rich diet often more can be accomplished than by absolute and long continued withdrawal of carbohydrates In the majority of mild cases, however, a restriction of the carbohydrate intake below the threshold of tolerance together with the avoidance of an undue protein intake and adaptation of the total calory intake to the daily expenditure of energy is to be preferred The reduction of the protein intake must not go so far as to endanger the supply of protein in the body Various forms of undernutrition, such as Allen's starvation treatment constitute only an extension although possibly, in some respects an exaggeration, of the customary fast days It is often surprising to find how easy it is to carry out the strict dietary recommended by Allen The principal field of indication for this treatment is the precomatose stage in severe acidosis There may be other cases in which it will occasionally be of advantage to begin a course of treatment with fast days if it is desired to secure promptly tangible results However undernutrition is fraught with danger which can be avoided only by careful observation Though recent departures from former therapeutic methods present nothing essentially new they at least offer in their technical details some things that may be regarded as a reenforcement of our therapeutic armamentarium They may prove to be of great value if they are used to afford greater opportunity for individualized treatment Recent therapeutic observations have changed nothing with respect to the theoretical basis of the knowledge of diabetes As formerly, we can still maintain that 1 The disease that can be truly termed diabetes is attributable, in the main to disturbances of pancreas function Other organs concerned with carbohydrate metabolism affect only the intensity and the course of the glycosuria 2 With respect to the functioning of the pancreas, we are concerned with the positive performance of the gland and not merely with a retarding mechanism or the arrest of sugar formation in the liver Diabetes referable to the pancreas cannot be regarded simply as an unchecked glycosuria traceable to epinephrin 3 The functioning of the pancreas is necessary for the normal utilization of carbohydrates by the organism It is true there may be an abnormal increase in formation of sugar, but diabetic glycosuria is not explainable without disturbance of sugar metabolism

Marriages

MICHAEL A. DAILEY, Major, M. C., U. S. Army, Marfa, Texas, to Miss Joeen Margaret O'Brien of Paris, Texas, June 25

FRANCIS E. TIERNEY, Lieut., M. C., U. S. Navy, to Miss Alice E. Killfoile of Stockbridge, Mass., in New York, July 7

WALTER J. PENNELL, Lieut. M. C., U. S. Navy, Washington, D. C., to Miss Mary E. Eliason, at Washington, July 6

EUGENE HERBERT TOWNSEND, JR., La Crosse, Wis., to Miss Lillian Caroline Johnson of Canton, Minn., July 16

CHARLES EDWARD LOCKE, JR., Manila, P. I., to Miss Jane Thompson of Pasadena, Calif., in Detroit, June 21

FREDERICK PELHAM SUTHERLAND, Martins Ferry, Ohio, to Miss Anna Obrist of Portsmouth, Ohio, June 29

E. LEAVENWORTH MCGILL, Petersburg, Va., to Miss Patty Radcliffe Fitts of Wilmington, N. C., June 28

WILLIAM WIRT WADDELL, JR., Norton, Va., to Miss Barbara Belle Flock of Williamsport, Pa., June 14

JOHN STUART HUME, Norfolk, Va., to Miss Isabel Hamilton Christian of Lexington, Va., June 4

RICHARD HUGH WOOD, Richmond, Va., to Miss Maria Booth Robinson of King William, Va., June 18

HENRY A. CHRISTIAN, Boston, to Miss Elizabeth Sears Seabury of Longwood, Mass., about July 3

ALLEN TUPPER HAWTHORNE, Harrisonburg, Va., to Miss Dorothy Turner of Afton, Va., June 2

QUINTUS HARPER BARNEY to Miss Nell Richard Files, both of Wardensville, W. Va., June 25

CAMPBELL HARRIS to Miss Winifred Gertrude Gwynne, both of Richmond, Va., June 3

GEORGE G. SNARR to Miss Reba Beard, both of Harrisonburg, Pa., June 29

ROBERT MACKENZIE to Miss Ethel L. Sweet, both of Detroit, May 19

Deaths

William J. Gallivan ⊕ Boston, Medical School of Harvard University, Boston, 1892, died, July 13, from heart disease, aged 56. Dr. Gallivan was director of the division of tuberculosis of the state department of public health, director of child hygiene department, 1911-1914, and health commissioner of Boston in 1915. He was the author of a bill establishing Rutland state sanatorium for treatment of tuberculosis, of a bill for the free distribution of antitoxin and also of a bill for creating a board of registration in medicine. For nine years he served as member of the school board.

Harry L. Arnold ⊕ Omaha, College of Physicians and Surgeons, Chicago, 1897, also postgraduate work at universities in Vienna, London and Germany, served as medical examiner of draft board, M. C., U. S. Army, during the World War, visiting ophthalmologist to the Creighton University and St. Joseph's Hospital, Omaha, died, July 8, from heart disease, aged 51.

Richard Burton Robards, Harrodsburg, Ky., Hospital College of Medicine, University of Kentucky, Louisville, 1902, member of Kentucky State Medical Association, while on the way to sanatorium in Shelbyville, Ind., for treatment, he was found dead in bed at the Belvedere Hotel, Columbus, Ind., July 7, probably due to overdose of heroin, aged 45.

B. H. Rand, Golden, Texas, Memphis Hospital Medical College, Memphis, 1893, served as state penitentiary surgeon at Allen Farm, during Governor Hogg's administration, died, June 13, from acute indigestion complicating malarial infection.

John Jacob Defendorf, Ionia, Mich., Detroit Homeopathic Medical College, Detroit, 1893, Civil War veteran, formerly attending surgeon at the Michigan Soldiers' Home, Grand Rapids, and local health officer, dropped dead, July 7, aged 71.

Archibald C. Fairbairn, Robbinsdale, Minn., Medical Faculty Queen's University, Kingston, Ont., 1871, at one time chief surgeon, Northern Pacific Railroad, died, July 9, in the General Hospital, Minneapolis, from pneumonia, aged 78.

Ira Condict Whitehead, Philadelphia, Berkshire Medical College, Pittsfield, Mass., 1855, acting assistant surgeon in the Navy, 1861-1865, and again from 1875-1879, died, July 11, in the U. S. Naval Hospital, Philadelphia, aged 88.

George Wayland Dodge, Moravia, N. Y., Eclectic Medical College of the city of New York, 1894, died, July 6, at Auburn City Hospital, N. Y., from internal injuries received when he fell from the porch of his home, aged 65.

William E. Kiely, Cincinnati, Medical College of Ohio, Cincinnati, 1877, member of Ohio State Medical Association, died, July 13, at the Good Samaritan Hospital, Cincinnati, from pneumonia, aged 71.

Joseph Henry Jansing, Cushing, Okla., St. Louis College of Physicians and Surgeons, St. Louis, 1911, served as captain, M. C., U. S. Army, during the late war, died, July 10, in Oklahoma City, aged 37.

Christopher Dean Mowry, Aurora, Ill., Rush Medical College, Chicago, 1876, practitioner in Aurora for forty years, died, July 6, in the St. Charles Hospital, Aurora, from liver trouble, aged 75.

Lucien Claude McElwee, St. Louis, Missouri Medical College, St. Louis, 1882, dean of the Homeopathic Medical College of Missouri, killed in a street car accident, July 3, aged 59.

Louis Braby Cunningham, Wampum, Pa., University of Pennsylvania, Philadelphia, 1916, was instantly killed in a motor accident at Centre Point, W. Va., June 29, aged 29.

Phillip Erhard ⊕ Syracuse, N. Y., Syracuse University, 1902, member of the staff, Hospital of the Good Shepherd, Syracuse, died, July 7, from pneumonia, aged 44.

John Francis McGowan, Pitkin, Colo., Louisville Medical College, Ky., 1880, died in July, at Salida, Colo., from burns received when his cabin ignited, aged 63.

Samuel T. Satterthwaite, Hendersonville, N. C., Bellevue Hospital College, New York, 1870, died, June 24, from gastro-enteritis, aged 71.

Frederick N. Beardslee, Manchester, N. H., Boston University, 1899, died, July 8, at Rye, N. Y., from cerebral hemorrhage, aged 51.

Lyman B. Blunt, East St. Louis, Ill., Meharry Medical College, Nashville, Tenn., 1890, died, May 12, from cancer of the throat, aged 55.

Henri A. Blakemore, Gallatin, Tenn., Vanderbilt University, Nashville, Tenn., 1880 and 1884, died, July 3, from senile cirrhosis, aged 80.

John Breckinridge Richardson, Louisville, Ky., Jefferson Medical College, Philadelphia, 1865, died, July 3, from myocarditis, aged 69.

Argus B. Swisher ⊕ Marysville, Ohio, Miami Medical College, Cincinnati, 1882, died, May 24, from cancer of the bladder, aged 67.

Isaac H. Magill, Corning, Kan., University Medical College, Kansas City, Mo., 1884, died, April 12, in Lawrence, Kan., aged 60.

Frank Brother Cone, San Francisco, Medical College of Ohio, Cincinnati, 1884, died, May 12, from anemia, aged 67.

John T. Allen ⊕ Brownsville, Tenn., Bellevue Hospital Medical College, New York, 1880, died, May 9, aged 65.

Ferdinand N. Ware, Thomson, Ga., University of Georgia, Augusta, 1888, died, June 20, from paralysis, aged 64.

A. Hampton Little, Milwaukee, Milwaukee Medical College, 1901, died, June 27, from tuberculosis, aged 42.

Harlow B. Drake ⊕ Detroit, Hahnemann Medical College of Philadelphia, 1873, died, July 5, aged 73.

Charles O. Smith, Atlanta, Ga., Atlanta Medical College, 1892, died suddenly, June 30, aged 55.

Wilmer Orla Lewis, Clay Center, Neb., University of Nebraska, Omaha, 1920, died, June 20.

Robert Lee Guthrie, Denver, University of Colorado, Denver, 1919, died, July 2, aged 27.

Henry B. Blake, Cottonwood, Idaho (license, Idaho, 1899), died, July 2, aged 79.

Thomas L. Luna, Floyd, Miss. (license, Mississippi, 1882), died, July 2, aged 66.

Correction.—In THE JOURNAL, May 14, appeared an obituary notice relative to Dr. S. Ringolsky, San Francisco. We are informed by Dr. Ringolsky that the announcement was an error. The information was sent to THE JOURNAL by the *California State Journal of Medicine* and was based on an erroneous press clipping.

⊕ Indicates Fellow of the American Medical Association.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

Nerv-Mintz—The Earle Chemical Co, Wheeling, W Va in July, 1920, consigned a quantity of this product which the federal authorities declared misbranded When analyzed by the federal chemists the preparation was found to consist of tablets containing essentially sabal, nux vomica, zinc phosphid, aloin and capsicum (red pepper) Nerv-Mintz was sold under such claims as

A nerve strengthener soothe and quiet the nerves used for the relief of Nervousness Loss of Vigor Energy and Ambition —Lack of Confidence Sleeplessness Trembling Nervelessness Shifty Gait Shattered Nerves Exhausted or Weakened Vitality Mental Depression, Numbness Weakening Habits and All Overworked and Unstrung Nerves Induced by Fast Living and Other Excesses "

exceptionally efficient in the treatment of Nervousness Loss of Vigor Energy and Ambition Lack of Confidence Sleeplessness Shifty Gait Shattered Nerves Weakened or Exhausted Vitality Mental or Physical Depression Weakening Habits "

Nerv Mintz prove most wonderful rejuvenators restoring the lost vitality you perhaps had thought was gone forever

These claims and others similar to them were declared false and fraudulent and applied with a knowledge of their falsity for the purpose of defrauding purchasers In September, 1920, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed —[*Notice of Judgment No 8859 issued May 18, 1921*]

Penslar Sancop Pearls—A quantity of this preparation alleged to have been shipped in December 1918, and January and March 1919, by the Peninsular Chemical Company Detroit Mich was declared misbranded The Bureau of Chemistry reported that analysis showed that the contents of the capsules consisted essentially of a mixture of essential oils and resins including oils of santal and cinnamon and copaiba and gurjun balsams The preparation was declared misbranded because the trade package contained such claims as

Penslar Sancop Pearls for Chronic or Subacute Inflammation of the Mucous Membrane of the Urethra Chronic Discharges from the Urinary Passages

Penslar Sancop Pearls for Chronic or Subacute Inflammation of the Urinary Passage Chronic Discharges from the Urethra etc

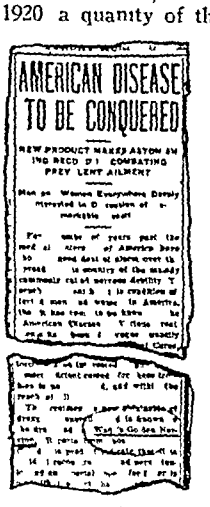
These were declared false and fraudulent and in August 1919 judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed —[*Notice of Judgment No 8880, issued May 18, 1921*]

Lezajskie Lecznicze Wino Elixir—Walter Wojtasinski who did business under the trade name of Wojtasinski Chemical Co Boston Mass shipped in October 1919 a quantity of this preparation which was declared misbranded The Bureau of Chemistry reported that "Lezajskie Lecznicze Wino Elixir consisted of a water-alcohol solution containing rhubarb and a trace of cascara The stuff was falsely and fraudulently represented as an effective treatment remedy and cure for all disturbances of the stomach, pains and dizziness of the head and a purifier of the blood It was further falsely represented that the article was approved by the federal government when it was not In November 1920 Wojtasinski entered a plea of *nolo contendere* and was fined $25—[*Notice of Judgment No 8950 issued May 24 1921*]

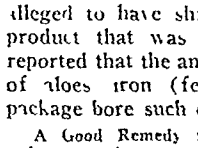
Porose Pills—The Lafayette Co Berlin N H consigned between June 1919 and June 1920, quantities of these pills which the federal officials declared misbranded The Bureau of Chemistry reported that the contents of the pills consisted essentially of iron (ferrous) carbonate nux vomica, a laxative plant drug, arsenic and unidentified plant extractives Claims were made on the trade package that these pills were unequalled for "delayed or even suppressed periods" and that they were the "best of regulating tonics for all women complaints" These and similar claims were declared false and fraudulent and in November, 1920, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed —[*Notice of Judgment No 8921, issued May 23 1921*]

Gold Medal Compound Pills—The Ashland Supply House Chicago, is alleged to have shipped in July, 1920, a quantity of this preparation which was misbranded The federal chemists reported that the pills consisted essentially of iron (ferrous) sulphate aloes and oil of pennyroyal The pills were sold under the claim that they were "a Most Effectual Emmenagogue" and that they would "Prevent Irregularities' These and similar claims were declared false and fraudulent and in December, 1920 judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed —[*Notice of Judgment No 8918 issued May 23 1921*]

Wade's Golden Nervine—The Gem Medicine Company of St Louis Mo, were alleged to have shipped in February, 1920 a quanity of this product which the federal authorities charged was misbranded The Bureau of Chemistry reported that analysis showed the pills to consist essentially of iron, phosphates strychnin damiana and gentian The preparation was recommended for 'Nervous Debility in Men and Women Weak Heart Rheumatism Neuralgia, Kidney Weakness Stomach and Blood troubles generally' and similar conditions These claims were declared false and fraudulent and in October 1920 a decree of condemnation and forfeiture was entered and the court ordered that the product be destroyed —[*Notice of Judgment No 8966 issued May 24 1921*]


AMERICAN DISEASE TO BE CONQUERED

NEW PRODUCT NAMED ASTON IN ING RECO D I COMBATING PREY LENT AILMENT



Allan's Star Brand Pills—The Allan-Pfeiffer Chemical Co, St Louis Mo, are alleged to have shipped in August, 1920, a quantity of this product that was misbranded. The Bureau of Chemistry reported that the analysis showed the pills to consist essentially of aloes iron (ferrous) sulphate and starch The trade package bore such claims as

A Good Remedy in Suppressed or Painful Menstruation to bring on the menses

To Prevent Irregularities Take one Pill four or five days preceding the expected appearance of the menstrual period

These and similar claims were declared false and fradulent in that the pills contained no ingredient or combination of ingredients capable of producing the effects claimed In November, 1920, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed —[*Notice of Judgment No 8959 issued May 24 1921*]

Cheeseman's Pills—A number of packages of Dr Cheeseman's Female Regulating Pills' were consigned by the Kells Co Newburgh N Y in February, 1920 and were declared by the federal authorities to be misbranded The Bureau of Chemistry reported that the pills were composed essentially of aloes and iron (ferrous) sulphate The package contained such claims as

Female Regulating Pills Obstruction of long standing in recent cases of Obstruction When Obstruction is apprehended In cases of Impotency or Barrenness Seminal Weakness Gleets Whites and all diseases arising from a relaxed state of the genital organs whether the result of disease injuries or consequences of youthful indiscretion or indulgence of the passions in riper years all sufferings connected with the womb and its dependencies a pecific remedy the only curatives known to the world designed to check and do away with irregularities

In December 1920 Eugene R Siering trading as Chas Meyer appeared as claimant of the property Judgment of

Marriages

MICHAEL A DAILEY, Major, M C, U S Army, Marfa, Texas to Miss Joeen Margaret O'Brien of Paris, Texas, June 25

FRANCIS E TIERNEY, Lieut, M C, U S Navy, to Miss Alice E Killfoile of Stockbridge Mass, in New York, July 7

WALTER J PENNELL, Lieut M C, U S Navy, Washington D C, to Miss Mary E Eliason, at Washington, July 6

EUGENE HERBERT TOWNSEND JR, La Crosse, Wis, to Miss Lillian Caroline Johnson of Canton, Minn, July 16

CHARLES EDWARD LOCKE JR, Manila, P I to Miss Jane Thompson of Pasadena, Calif, in Detroit, June 21

FREDERICK PELHAM SUTHERLAND, Martins Ferry, Ohio, to Miss Anna Obrist of Portsmouth, Ohio June 29

E LEAVENWORTH MCGILL, Petersburg Va to Miss Patty Radcliffe Fitts of Wilmington, N C, June 28

WILLIAM WIRT WADDELL, JR, Norton, Va to Miss Barbara Belle Flock of Williamsport, Pa, June 14

JOHN STUART HUME, Norfolk, Va, to Miss Isabel Hamilton Christian of Lexington, Va, June 4

RICHARD HUGH WOOD Richmond, Va to Miss Maria Booth Robinson of King William, Va, June 18

HENRY A CHRISTIAN, Boston to Miss Elizabeth Sears Seabury of Longwood, Mass about July 3

ALLEN TUPPER HAWTHORNE, Harrisonburg Va, to Miss Dorothy Turner of Afton, Va, June 2

QUINTUS HARPER BARNEY to Miss Nell Richard Files, both of Wardensville W Va June 25

CAMPBELL HARRIS to Miss Winifred Gertrude Gwynne, both of Richmond, Va, June 3

GEORGE G SNARR to Miss Reba Beard, both of Harrisonburg Pa June 29

ROBERT MACKENZIE to Miss Ethel L Sweet, both of Detroit, May 19

Deaths

William J Gallivan ⊕ Boston, Medical School of Harvard University Boston, 1892, died, July 13, from heart disease, aged 56 Dr Gallivan was director of the division of tuberculosis of the state department of public health, director of child hygiene department, 1911-1914, and health commissioner of Boston in 1915 He was the author of a bill establishing Rutland state sanatorium for treatment of tuberculosis, of a bill for the free distribution of antitoxin and also of a bill for creating a board of registration in medicine For nine years he served as member of the school board

Harry L Arnold ⊕ Omaha, College of Physicians and Surgeons, Chicago 1897, also postgraduate work at universities in Vienna, London and Germany, served as medical examiner of draft board, M C, U S Army, during the World War, visiting ophthalmologist to the Creighton University and St Joseph's Hospital, Omaha, died, July 8, from heart disease aged 51

Richard Burton Robards, Harrodsburg, Ky, Hospital College of Medicine University of Kentucky, Louisville, 1902, member of Kentucky State Medical Association, while on the way to sanatorium in Shelbyville, Ind, for treatment, he was found dead in bed at the Belvedere Hotel, Columbus, Ind, July 7, probably due to overdose of heroin, aged 45

B H Rand, Golden, Texas, Memphis Hospital Medical College, Memphis, 1893, served as state penitentiary surgeon at Allen Farm, during Governor Hogg's administration, died, June 13, from acute indigestion complicating malarial infection

John Jacob Defendorf, Ionia, Mich, Detroit Homeopathic Medical College, Detroit, 1893, Civil War veteran, formerly attending surgeon at the Michigan Soldiers' Home Grand Rapids, and local health officer, dropped dead, July 7, aged 71

Archibald C Fairbairn, Robbinsdale, Minn, Medical Faculty Queen's University, Kingston, Ont, 1871, at one time chief surgeon Northern Pacific Railroad, died, July 9, in the General Hospital, Minneapolis, from pneumonia, aged 78

⊕ Indicates Fellow of the American Medical Association

Ira Condict Whitehead, Philadelphia, Berkshire Medical College, Pittsfield, Mass, 1855, acting assistant surgeon in the Navy, 1861-1865, and again from 1875-1879, died, July 11, in the U S Naval Hospital, Philadelphia, aged 88

George Wayland Dodge, Moravia, N Y, Eclectic Medical College of the city of New York, 1894, died, July 6, at Auburn City Hospital, N Y, from internal injuries received when he fell from the porch of his home, aged 65

William L Kiely, Cincinnati, Medical College of Ohio Cincinnati, 1877, member of Ohio State Medical Association, died, July 13, at the Good Samaritan Hospital, Cincinnati, from pneumonia, aged 71

Joseph Henry Jansing, Cushing Okla, St Louis College of Physicians and Surgeons St Louis, 1911, served as captain M C, U S Army during the late war, died, July 10, in Oklahoma City, aged 37

Christopher Dean Mowry, Aurora, Ill, Rush Medical College Chicago, 1876, practitioner in Aurora for forty years, died July 6, in the St Charles Hospital Aurora, from liver trouble, aged 75

Lucien Claude McElwee, St Louis, Missouri Medical College, St Louis, 1882, dean of the Homeopathic Medical College of Missouri, killed in a street car accident, July 3 aged 59

Louis Braby Cunningham, Wampum, Pa, University of Pennsylvania, Philadelphia, 1916, was instantly killed in a motor accident at Centre Point, W Va, June 29, aged 29

Phillip Erhard ⊕ Syracuse N Y, Syracuse University, 1902, member of the staff, Hospital of the Good Shepherd Syracuse, died, July 7, from pneumonia, aged 44

John Francis McGowan, Pitkin, Colo, Louisville Medical College Ky, 1880, died in July, at Salida, Colo, from burns received when his cabin ignited, aged 63

Samuel T Satterthwaite, Hendersonville N C, Bellevue Hospital College, New York, 1870, died, June 24 from gastro-enteritis, aged 71

Frederick N Beardslee, Manchester, N H, Boston University, 1899, died, July 8, at Rye, N Y, from cerebral hemorrhage aged 51

Lyman B Bluitt, East St Louis, Ill, Meharry Medical College, Nashville Tenn, 1890, died, May 12, from cancer of the throat, aged 55

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Nerv-Mintz prove most wonderful rejuvenators restoring the lost vitality you perhaps had thought was gone forever

These claims and others similar to them were declared false and fraudulent and applied with a knowledge of their falsity for the purpose of defrauding purchasers In September, 1920 judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed —[*Notice of Judgment No 8859 issued May 18 1921*]

Penslar Sancop Pearls—A quantity of this preparation alleged to have been shipped in December 1918, and January and March 1919 by the Peninsular Chemical Company Detroit Mich was declared misbranded The Bureau of Chemistry reported that analysis showed that the contents of the capsules consisted essentially of a mixture of essential oils and resins, including oils of santal and cinnamon and copaiba and gurjun balsams The preparation was declared misbranded because the trade package contained such claims as

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Penslar Sancop Pearls for Chronic or Subacute Inflammation of the Urinary Passage Chronic Discharges from the Urethra etc

These were declared false and fraudulent and in August 1919 judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed —[*Notice of Judgment No 8880 issued May 18 1921*]

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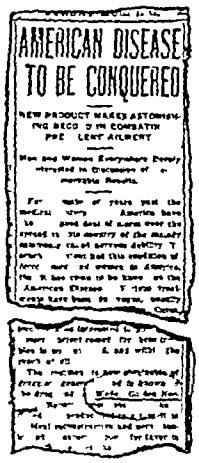
Gold Medal Compound Pills—The Ashland Supply House Chicago is alleged to have shipped in July, 1920, a quantity of this preparation which was misbranded The federal chemists reported that the pills consisted essentially of iron (ferrous) sulphate, aloes and oil of pennyroyal The pills were sold under the claim that they were a Most Effectual Emmenagogue' and that they would "Prevent Irregularities' These and similar claims were declared false and fraudulent and in December 1920 judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed —[*Notice of Judgment No 8918 issued May 23, 1921*]

Wade's Golden Nervine—The Gem Medicine Company of St Louis Mo, were alleged to have shipped in February, 1920 a quanity of this product which the federal authorities charged was misbranded The Bureau of Chemistry reported that analysis showed the pills to consist essentially of iron phosphates, strychnin damiana and gentian The preparation was recommended for 'Nervous Debility in Men and Women Weak Heart Rheumatism Neuralgia Kidney Weakness Stomach and Blood troubles generally' and similar conditions These claims were declared false and fraudulent and in October 1920 a decree of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No 8966 issued May 24 1921*]


AMERICAN DISEASE TO BE CONQUERED

NEW PRODUCT MEETS ASTONISHING RECORD IN COMBATTING PRESENT AILMENT

Allan's Star Brand Pills—The Allan-Pfeiffer Chemical Co St Louis Mo are alleged to have shipped in August 1920 a quantity of this product that was misbranded. The Bureau of Chemistry reported that the analysis showed the pills to consist essentially of aloes iron (ferrous) sulphate and starch The trade package bore such claims as

A Good Remedy in Suppressed or Painful Menstruation to bring on the menses

To Prevent Irregularities Take one Pill four or five days preceding the expected appearance of the menstrual period

These and similar claims were declared false and fradulent in that the pills contained no ingredient or combination of ingredients capable of producing the effects claimed In November, 1920 judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed —[*Notice of Judgment No 8959 issued May 24 1921*]

Cheeseman's Pills—A number of packages of Dr Cheeseman's Female Regulating Pills were consigned by the Kells Co Newburgh N Y., in February, 1920 and were declared by the federal authorities to be misbranded The Bureau of Chemistry reported that the pills were composed essentially of aloes and iron (ferrous) sulphate The package contained such claims as

Female Regulating Pills Obstruction of long standing in recent cases of Obstruction When Obstruction is apprehended In cases of Impotency or Barrenness Seminal Weakness Gleets Whites and all diseases arising from a relaxed state of the genital organs whether the result of disease injuries or consequences of youthful indiscretion or indulgence of the passions in riper years all sufferings connected with the womb and its dependencies a pecific remedy the only curatives known to the world designed to check and do away with irregularities

In December 1920 Eugene R Siering trading as Chas Meyer appeared as claimant of the property Judgment of

condemnation and forfeiture was entered and the court ordered that the product be released to Siering on execution of a bond in the sum of $100 on the condition that the goods be relabeled under the supervision of the Department of Agriculture—*[Notice of Judgment No 8729, issued April 27, 1921]*

Dr Gunn's Blood and Nerve Tonic—The United Medicine Co, Philadelphia, shipped in November, 1919, a quantity of this product which was declared misbranded The federal chemists reported that analysis showed the preparation to consist of tablets composed essentially of aloes, phosphorus and strychnin Such false and fraudulent therapeutic claims as those that follow appeared on or in the trade package

For Diseases of the Blood and Nerves Such as Dizziness Despondency General Debility and Weakness with little strength and vigor

In cases where there is a weakness of the sexual organs take the tonic regularly women and girls for suppression of the monthly flow take the tablets regularly

For Diseases of the Blood and Nerves Dizziness Despondency, General Debility Weakness with little Strength and Vigor '

In August, 1920, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—*[Notice of Judgment No 8857, issued May 18, 1921]*

Hooper's Female Pills—In May, 1920, the Horace B Taylor Co, Philadelphia shipped a quantity of this product which the federal officials declared misbranded The Bureau of Chemistry reported that analysis of a sample of the article showed the pills to consist essentially of aloes and iron (ferrous) sulphate The pills were sold under the claim that they were 'a safe and sovereign remedy in female complaints" and "an emmenagogue in producing Menstruation" and to "open those obstructions which virgins are liable to" and "for the palpitations of the heart, giddiness, loathing of food, bad digestion, pains of the stomach, heating of the arteries of the neck short breath" These claims were declared false and fraudulent and in October 1920, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—*[Notice of Judgment No 8868, issued May 18, 1921]*

Correspondence

SPIROCIDE AND THE INHALATION METHOD OF TREATING SYPHILIS

To the Editor—For some time the Spirocide Corporation, 153 West Twenty-Third Street, New York City, has been billing the medical profession with a series of pamphlets attempting to show that they have an inhalation and fumigation treatment of syphilis which is 'new, safe, convenient and easily administered," to quote their terms, and that "it has no disagreeable feature to alarm or distress the patient" They claim that this preparation will remove all signs and evidence of syphilis, no matter what the stage, advising the use of one of their inhalations every day, or every other day until six have been taken To quote from their pamphlet "A Safe and Successful Treatment,' page 5, "these six treatments are sufficient to cause all symptoms of syphilis to disappear and clear the blood and body tissues of the treponema pallidum" They say, further "In from ten days to three months positive Wassermann reactions become negative and rarely return to positive"

I have several criticisms to make Their claim, in the first place—the inhalation treatment of syphilis by mercury—is not new, but has been used since the year 1506 and has been given up by almost every well trained syphilographer for many years because of the fact that it is not only irritating to the lungs, but also dangerous and of uncertain dosage As early as 1735, inunctions were carefully tried out by the medical authorities of the University of Paris, and Astruc tells us that of the thirty-seven cases of fresh syphilis—all of them more or less of a mild type—that were treated at this test, four of the patients died during the course of the treatment, one of them as early as the ninth inhalation Moreover, he tells us twelve of them, about one third, seemed to be benefited at the time, but later, even some of these showed signs of the recurrence of the disease In other words, the inhalation treatment is not new, nor, in the second place, is it safe, so that the first two of their claims are entirely false It is quite possible that their further claims for the remedy, that it is convenient and easily administered, are true, nevertheless, with the first two faults they amount to nothing I wish to go on record as being unhesitatingly opposed to the inhalation treatment of syphilis, and to say that it is far from being free from danger

I should also like to say that the Spirocide Corporation is making a very bold statement on its published card mailed to physicians showing a blood smear from a syphilitic patient containing *Spirochaeta pallida* and *Spirochaeta refringens* in rather large numbers in comparison with the number of red cells shown It is a well known fact that even in secondary syphilis it is almost an impossible thing to find *Spirochaeta pallida* in the blood smear, and, certainly in such numbers, it is unheard of In my many years of work with syphilis I have yet to see the blood smear from a case of secondary syphilis in which we found any *Spirochaeta pallida* present and why, in such a patient, *Spirochaeta refringens* should be seen only the Spirocide Corporation can explain I should also be glad to have them explain to the medical profession how their inhalation treatment with mercury will remove *Spirochaeta refringens* from the blood stream as per their picture, saying nothing of their mythical *Spirochaeta pallida*

The card with the graphic illustration of these organisms in the blood—before and after the inhalation treatment—reminds one of the hair tonic advertisement, "before and after"

H N COLE, M D, Cleveland

"ETIOLOGY OF THE COMMON COLD"

To the Editor—Your comment on the "Etiology of the Common Cold" (THE JOURNAL, July 16, 1921, p 206) strikes me as apt, and it should call for a discussion I have believed for some years that common colds are due primarily to the development of bacterial growths in the accessory nasal sinuses, and that this development is caused by the obstruction of the drainage of these sinuses by the swelling of the nasal mucosa Swelling of the mucosa is due in turn to irritation from some foreign substance, such as dust, bacteria and pollen The bacteria are those ordinarily found in the nasal cavity and cause trouble only when the free access of air into the field is prevented by the swollen mucosa This opinion has been strengthened by the fact that continuous treatment or spraying with a mild nonirritant astringent will in the majority of cases arrest an acute cold When a cold holds on for as much as a week I have nearly always found cloudiness in one or more of the sinuses, and get immediate relief by washing out these sinuses with a mild alkaline solution

G M MAXWELL, M D, Roanoke Va

To the Editor—Referring to your editorial comment, July 16 on the causes of common colds I have long been convinced that colds' in the nose and throat are not caused by bacteria but are produced primarily by temperature changes which may light up the bacterial flora already present" in the nose and pharynx Repeatedly in my own experience the sudden chilling of a part of the body that has been warm and moist, the removing of a coat and sitting momentarily in a draft, or coming in warm and perspiring and sitting in a cool room would immediately produce a goose-flesh" feeling

locally, and simultaneously a congestion of the nasal or pharyngeal membrane At times I had a moment's warning, a trifling local chilliness with stuffiness of the nose, which if I heeded and got up instantly and moved about I could prevent from becoming a full fledged "cold" Even when the sneezing had begun with leakage at the nose—a sign invariably with me of developed "cold in the head"—I could as invariably abort these 'colds" by (1) strenuous exercise maintained until all sensation of stuffiness of nose and throat had gone, or by (2) a short cold foot bath, or (3) a longer hot foot and leg bath, or (4) by application of an electric heating lamp, following this by quickly covering the feet and legs, keeping them warm either in shoes by motion or in bed wrapped warmly (this if retiring) Thus I have been able to abort colds" in myself and others repeatedly and, I may even venture to say, invariably Whenever a "cold" developed and was in a situation where I could not apply the abortive treatment mentioned, and I could not get up instantly and move, I found that lively exercising and straining the *muscles below the knees* to keep the blood there—to prevent the sudden contraction of the arterioles there and the simultaneous dilatation of those in the mucous membrane of nose and pharynx—would suffice

If bacteria were the primary cause instead of congestion produced by chilling of a remote part of the body, surely I could not oust them in the incipient stage of a 'cold ' with sneezing and watery discharge already present, by quickly restoring normal circulation through the body

J W MACMILLAN, M D, Avon-by-the-Sea, N J

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed Every letter must contain the writer s name and address but these will be omitted, on request

PROCAIN DERMATITIS

To the Editor —A patient who consulted me has had a dermatitis of an obscure type on the forehead involving also the eyebrows ears hands and thighs This eruption is pale macular, itching and desquamating At times there are some itching papules of the same color as the skin There is troublesome burning It was thought that metol a photographic chemical might be the exciting cause but it apparently is not This man uses procain freely and is not very careful about getting the fumes of a boiling solution or about getting the solution on the hands Can you refer me to any literature on this subject? Can you tell me whether any toxic effects have been observed from the use of procain? What treatment is used for dermatitis due to this cause?

FRED E CLOW M D, Wolfboro N H

ANSWER—Lane (*Archives of Dermatology and Syphilology* March 1921) cites the cases of three patients who had dermatitis of the hands which appeared following the use of procain When discontinuing the use of this substance or on wearing gloves, the irritation disappeared and the hands became normal Skin tests carried out with procain indicated that it was the specific cause Treatment is of course palliative, and includes removal of the etiologic factor

REMOVAL OF SILVER STAINS

To the Editor —Can you advise me of anything that will remove silver nitrate stains? I have heard that a preparation of sodium sulphite is used I use silver nitrate daily and get it on my hand Am anxious to know what will remove it

J P BRANDON M D Essex Mo

ANSWER—Among the methods which have been suggested for the removal of such stains are a thorough rubbing with a salt grease such as bacon grease, followed by scrubbing with soap and water or the application of dilute solutions of mercuric chlorid Painting silver nitrate stains with tincture of iodin will change the black stain to an almost invisible yellow silver iodid stain Treatment of this stain with ammonia water will decolorize it further

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA Juneau Sept 6 Sec Dr Harry C De Vighne Juneau
FLORIDA Jacksonville Aug 1 Sec Dr William M Rowlett, Citizens Bank Bldg Tampa
NEW HAMPSHIRE Concord, Sept 9 10 Sec Dr Charles Duncan Concord

Ohio January Examination

Dr H M Platter, secretary, Ohio State Medical Board, reports that 37 candidates including 1 undergraduate, were licensed by reciprocity at the meeting held Jan 4, 1921 The following colleges were represented

College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Howard University		(1919)	Dist Colum
College of Physicians and Surgeons Chicago		(1891)	Illinois
Illinois Medical College		(1902)	Penna
Northwestern University		(1920 2)	Illinois
Rush Medical College		(1900)	Illinois
Indiana University School of Medicine		(1916)	Indiana
Medical College of Indiana		(1898)	Indiana
Hospital College of Medicine Louisville		(1901)	Indiana
Kentucky School of Medicine		(1901)	Kentucky
Louisville Medical College		(1904)	Washington
Louisville National Medical College		(1911)	Kentucky
University of Kentucky		(1901)	Indiana
University of Louisville		(1916)	W Virginia
Johns Hopkins University	(1903) Missouri	(1919)	Maryland
University of Maryland		(1898)	Maryland
Tufts Medical College		(1920)	Maine
University of Michigan Medical School	(1908) (1918) (1920 3) Michigan	(1899)	Penna
University of Michigan Homeopathic Medical School		(1906)	Michigan
Columbia University		(1902)	New York
New York Homeopathic Med Coll & Flower Hosp		(1918)	Penna
University of Buffalo		(1902)	New York
Pulte Medical College		(1889)	Kentucky
Jefferson Medical College		(1901)	California
University of Pennsylvania		(1896)	Penna
University of Pittsburgh		(1918)	Penna
Medico Chirurgical College of Philadelphia		(1912)	Penna
Meharry Medical College		(1906)	Alabama
Medical College of Virginia		(1916)	Virginia
McGill University		(1907)	Maine
University of Toronto		(1911)	Penna
Undergraduate			Alabama

Arkansas May Examination

Dr T J Stout, secretary, Arkansas State Board of Medical Examiners, reports the written examination held at Little Rock May 10-11, 1921 The examination covered 12 subjects and included 120 questions An average of 75 per cent was required to pass Of the 23 candidates examined, 22 passed and 1 failed Twenty-six candidates were licensed by reciprocity The following colleges were represented

College	PASSED	Year Grad	Per Cent
University of Arkansas	(1904) 87 7	(1906)	85 1
College of Physicians and Surgeons Little Rock		(1910)	82 5
National Univ of Arts and Sciences Medical Dept		(1912)	81 5
University Medical College of Kansas City		(1899)	88 7
Jefferson Medical College		(1911)	90 7
College of Physicians and Surgeons Memphis		(1909)	80 4
Meharry Medical College	(1918) 75	(1921) 77	77 7
Memphis Hospital Medical College	(1902) 82 6 86 (1904) 87 7	(1892)	82 9
Vanderbilt University		(1917)	82 6
University of Tennessee	(1921) 78 6 83 6 84 84 1	84 7 86	86 6 88 6
	FAILED		
Meharry Medical College		(1902)	43 6

College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Northwestern University		(1918)	Illinois
Rush Medical College		(1911)	Illinois
University of Illinois		(1913)	Texas
Kentucky School of Medicine		(1908)	Mississippi
University of Louisville	(1805) Louisiana Tennessee (1921) Kentucky	(1911)	Louisiana
Tulane University		(1914)	Louisiana
Johns Hopkins University		(1920)	Maryland
University of Michigan Medical School		(1897)	Wisconsin
University Medical College of Kansas City		(1906)	Oklahoma
Washington University Medical School		(1916)	Missouri
University and Bellevue Hospital Medical College		(1913)	New York
University of Oklahoma		(1917)	Oklahoma
University of Pennsylvania		(1915)	Penna
Memphis Hospital Med College	(1906) Tennessee	(1911)	Texas
University of Nashville		(1905)	Mississippi
University of Tennessee		(1914)	Mississippi
Vanderbilt University	(1915) (1919)	(1920)	Tennessee
Baylor University		(1911)	Texas
University of Texas	(1918)	(1919)	Texas

Book Notices

LYMPHOSARCOMA LYMPHATIC LEUKÆMIA LEUCOSARCOMA. HODGKIN'S DISEASE By L T Webster The Johns Hopkins Hospital Reports Volume XX, Fasciculus III Paper Price $1 50 Pp 63 with 12 illustrations Baltimore The Johns Hopkins Press 1921

This monograph consists of a study of 123 cases of these perplexing lymphomatous growths, which exhibit a similarity and a relationship that notoriously lead to more difficulty and confusion than perhaps any other field in pathologic anatomy Little help in differentiation is secured from this study which, as with other similar investigations, has failed to disclose any essential distinguishing points The conclusion is reached that probably leukosarcoma, lymphosarcoma and lymphatic leukemia are different manifestations of the same disease which is readily distinguished from lymphogranulomatosis, to which class of cases the author would limit the term "Hodgkin's disease" although it is quite certain that Hodgkin included in his clinical picture many other conditions It also is assumed that this group of diseases, for which the term "lymphadenosis, leukemic or aleukemic" is preferred is not a neoplasm but a direct response on the part of lymphocytes to some unknown infectious agent although the evidence to the contrary does not seem to be adequately considered It was found that cases in which the lymphocytes showed evidence of ameboid activity usually pursued a rapid, fatal course As a careful study of a large amount of material in a most perplexing field of pathology, this monograph is a valuable contribution to the literature

THE CHEMISTRY OF ENZYME ACTIONS By K George Falk Harriman Research Laboratory The Roosevelt Hospital New York American Chemical Society Monograph Series Cloth Price $2 50 Pp 136 New York The Chemical Catalog Company Inc 1921

The American Chemical Society has entered upon the laudable undertaking of publishing a scientific series, as well as a technologic series, of monographs The purposes of the society are twofold (1) to present the knowledge available on the chosen chemical topic in a readable form intelligible to those whose activities may be along a wholly different line, (2) to promote research in the branch of science covered by the monograph, by furnishing a well digested survey of the progress already made in the field and by pointing out directions in which investigation needs to be extended The editors of the scientific monographs are W A Noyes G N Lewis Lafayette B Mendel, A A Noyes and Julius Stieglitz—two of whom are members of the Council on Pharmacy and Chemistry of the American Medical Association The American Chemical Society is to be congratulated on this serious attempt 'to found an American chemical literature without primary regard to commercial considerations" This is the first finished publication of the scientific series The author has developed the treatise by considering the relations and theories of chemistry as of paramount importance Thus the introduction shows the interrelationship of enzymes" and catalysts ' leading into modern conceptions from the electron point of view Of course the consideration of colloidal conditions are not neglected The necessity of a proper understanding of the great role assumed by the actual acidity hydrogen ion concentration—or, as is it more commonly spoken of—the p_H' is particularly emphasized As has been pointed out by THE JOURNAL a number of times before in reviews on chemical topics there are few, if any physiochemical subjects more important to the physician than that of hydrogen ion concentration It is particularly striking that in the subject at hand, which affects so vitally living matter the author states that the hydrogen ion concentration "is unquestionably one of the most important standards by which the properties of the solvent and the dissolved substances can be controlled' The next six chapters treat of the velocities and general theory of chemical reactions and the properties chemical and physical, common to enzyme reactions In the eighth chapter the material of the preceding chapters is brought to bear on the explanation of the mechanism of enzyme reactions, to the nonbiochemical worker the reasons for the chemical kinetics became apparent, and fitly following is the discussion of the utilitarian aspects rather than the purely scientific side of enzyme actions The author points out that enzymes are associated with all living matter in order to favor production of products which might otherwise be found in only small amounts, the actions are present in all phenomena accompanying growth, including metabolic and catabolic changes Hence no apology is needed for dedicating a whole book to the subject As to the industrial application of enzymes, the author erroneously points out that "takadiastase" is an "official pharmaceutical preparation" "Takadiastase" is *not* described in the Pharmacopeia, in fact this proprietary has been rejected by the Council on Pharmacy and Chemistry for inclusion in New and Nonofficial Remedies For those interested in enzymes and so called vital processes, the book should be of great value It abounds in references but unfortunately it has no bibliography—a department which, it is hoped, will be incorporated in future issues of the scientific monograph series

FEEBLENESS OF GROWTH AND CONGENITAL DWARFISM WITH SPECIAL REFERENCE TO DYSOSTOSIS CLEIDO CRANIALIS By Dr Murk Jansen O B E Lecturer on Orthopaedic Surgery University of Leiden Holland Cloth Price $5 00 Pp 82 with 40 illustrations New York Oxford University Press 1921

As the title implies, this monograph takes up the feebleness of growth from a comparatively new angle The cardinal principles on which the subject matter are based are (1) Feebleness of growth is proportional to the intensity of nocivity (2) feebleness of growth is proportional to the rapidity of the growth of the individual and its parts, and (3) feebleness of growth is characterized by enhanced sensibility and enhanced fatigability The first portion of the book is devoted to the relation of fatigue of the mother to feebleness of growth in the child, several cases are reported which illustrate the correlation between the degree of the fatigue and the feebleness of growth In this part the author takes up the question of the retardation of cell differentiation causing the thickening of cartilages, and he demonstrates this condition in rickets as an example In the second part is considered congenital dwarfism, with special reference to dysostosis and cleidocranialisis He associates with the condition not only the usual symptoms given but also the shortening of the intermediate terminal phalanges of the toes, the widened ends of the latter are missing as though they had been nibbled off, and, second, the bilateral narrowing of the chest This also he finds to be constantly present He believes that the chief factor in the production of this condition is a deficiency of the amnion, which produces cramping of the fetus in utero in the eighth week of fetal life It is at this time that all parts affected in the condition are showing their greatest period of growth, and hence, according to the writer the restriction of growh at this time is more effective in the parts concerned He carries on this theory as an explanation of anencephaly, achondroplasia and mongoloid idiocy, and explains to a degree clubfoot and congenital dislocation of the hip on the same basis The book opens up a new field for speculation

A GUIDE TO THE DISEASES OF THE NOSE AND THROAT AND THEIR TREATMENT By Charles A Parker F R C P Consulting Surgeon to the Throat Hospital Golden Square W and Lionel Colledge M B F R C S Surgeon to the Ear and Throat Department St George's Hospital S W London Second edition Cloth Price $8 50 Pp 583 with illustrations New York Longmans Green & Co 1921

This work is the delayed second edition of a textbook popular in British medicine a number of years ago The present volume is impressive as a standard text and will make many friends in this country among students and practitioners In one feature there is a unique departure from the usual construction of works on the nose and throat—the insertion of a section of four chapters dealing with the relation of the subject to general medicine. Acute and chronic infections and chronic organic and constitutional diseases are reviewed and briefly discussed under separate headings The book is well arranged and sensibly illustrated In regard to operative technic and instrumentation the usual criticism of European surgical methods may well apply to a number of recommendations in the volume

Miscellany

NECESSARY QUALITIES FOR A SURGEON

Dr E Forgue, professor of clinical surgery in the school of medicine of the University of Montpellier, has just published in the *Presse medicale* an article entitled "Advice to Students Who Intend to Become Surgeons" This article brings out clearly and concisely the qualities that are indispensable for a surgeon Physicians are not all equally suited for surgical practice The future surgeon must have a delicate touch and a firm and dextrous hand, also good sight, good judgment and an ingenious mind He must have what is known as a surgical temperament, that is, a mastery of himself and a presence of mind allowing him to face the gravest and most unexpected incidents He must be endowed with great patience combined with firmness of character He should be resolute of thought and quick of action He should possess the necessary courage to face responsibility Added to these forceful qualities, he must have polished manners and such control of language that he can convince, console and inspire confidence The helping hand of the surgeon has been personified by mythology, for the centaur Chiron, the healer, gets his name from χείρ, hand, and it is also consecrated by the very term 'surgery" (French *chirurgie*), which means in Greek "work of the hand" The technical training of the modern surgeon becomes broader and more complex as science progresses It has become necessary for the future surgeon to spend a considerable length of time in the laboratories of pathologic and bacteriologic anatomy, in order to acquire knowledge of the methods of research, to interpret laboratory findings and to learn their clinical application, for diagnosis, operative indications and even operative results depend on the alliance between the laboratory and the clinic The great problems of immunization serotherapy and vaccination are matters of common practice, and no surgeon can be a stranger to them No wise surgeon will think of forming a final opinion in serious urinary disease without determining the amount of nitrogen in the blood and the index of urea excretion The deviation of complement aids in ferreting out syphilis, which is so often present, likewise sporotrichosis, and as a consequence the knife is abandoned when iodids suffice The bacteriologic study of wounds during the war has furnished too valuable a guidance not to continue to profit by the information it offers in peace-time surgery However, it does not suffice that a surgeon shall be gifted, learned, a good clinician, and a tried technician In order to be successful, and especially, in order to hold a strong position in the professional world, he must have a high moral character In this connection Forgue mentions a peculiar formula that Americans apply to their teaching, their aim is said to be the study of the three h's the training of "head hand and heart" The surgeon must set for himself the same goal

THE ETIOLOGY OF YELLOW FEVER

In a lecture delivered before the Academy of Medicine of Havana, February 14 (*Sanidad y Beneficencia Boletin Oficial de la Secretaria* **25** 39 [Jan.-March] 1921), Dr Guiteras dwells at some length on this subject and summarizes his reasons for the doubts which will still remain in his mind These are, briefly, as follows

1 A discrepancy apparently exists between Noguchi's statements and our present knowledge of the epidemiology of yellow fever If the disease was so easily communicable to a series of animals, including the dog and the guinea-pig, how is it possible to eradicate the disease by breaking the chain between the yellow fever and man, as was done in Havana? And how is it possible that there have never been any epizootic manifestations of yellow fever among these animals in the endemic centers and during great epidemic invasions?

2 Noguchi's organism is easily inoculated through various superficial lesions of the skin whereas all fear of necropsies has been lost since the discoveries of Reed, Carroll and Lazear Fomites, blood and viscera have been handled by careless assistants without ever causing infection Fomites, in fact, appear absolutely innocuous

3 The number of cases in which Noguchi has succeeded in demonstrating the presence of his parasite, either by direct blood examination or by inoculation into guinea-pigs, is relatively small

4 Noguchi has had a considerable number of successes with blood taken after the third day of the disease, while the experiments of the American commission tended to show that the virus disappears from the peripheral circulation after the third day

5 Noguchi's experiments with the transmission of his virus from man to the guinea-pig through the mosquito have been few Out of six experiments, one was successful and one was doubtful and he has not been explicit with regard to the details of the positive case

6 The anatomic lesions found in guinea-pigs infected with the Noguchi organism are quite distinct from those that we find in man with yellow fever On the other hand, they are identical with those found in Weil's disease and in pigs infected with either of the leptospiras

7 The epidemiologic and clinical differences between yellow fever and Weil's disease are so fundamental that it is difficult to believe that they are produced by such closely allied organisms as are the two species, or subspecies, of Inada and Noguchi

Dr Guiteras then draws a contrast between yellow fever, so virulent in the old days, and Weil's disease at the present time

8 Clinically the two diseases are quite dissimilar the period of incubation is short in yellow fever, and from seven to fourteen days in Weil's disease, of short duration and one single paroxysm in yellow fever, but with a remission in some cases similar to that of many acute febrile infections, and in Weil's disease a long duration with a recurrent type of fever as in the relapsing fevers of similar spirochetal origin etc

9 Guiteras is under the impression that there is no convincing proof of the efficacy of the vaccine and serum prepared by Noguchi, and believes that they have come into play at times when active measures for the eradication of the disease were already in progress

10 Hematologic pictures of the two diseases belong to quite distinct groups that of Weil's disease conforming with the relapsing fevers that of yellow fever with the hematologic formula of the filterable viruses

Guiteras concludes "It may be that the leptospiral infection found in some cases of yellow fever is a secondary infection similar to those that are found in influenza, the actual causative agent remaining as yet unknown This, however is but a theoretical suggestion Let us hope that the genial Japanese investigator may be able to establish on a firm basis his discovery"

CENTENNIAL OF INTRODUCTION OF IODIN INTO THERAPEUTICS

Iodin was first isolated by Courtois, in 1811, but 100 years ago Dr J J Coindet published his 'Decouverte d'un nouveau remede contre le goitre" after having reported on his success with the new remedy in the treatment of goiter at the annual meeting of the Societe helvetique des sciences naturelles at Geneva, in July 1820 The French Academie des sciences conferred on him a 4000 franc prize, and the Bordeaux medical society awarded him another The fame of iodin in the treatment of goiter spread, and it was used in many other diseases In 1829, Berton advocated inhalation of the fumes of nascent iodin The first enthusiasm with regard to iodin in the treatment of goiter and other pathologic conditions was soon followed by mishaps and Coindet was denounced The *Paris medical* Nov 27, 1920, quotes a letter from his son telling of his disappointment "Held accountable for accidents for which only imprudent technic was really responsible wounded in his dearest affections and in his reputation as an enlightened and cautious physician he resolved to do no further research work, and in fact he never

published anything after this But he urged me nevertheless to study the subject if possible from a new standpoint' Comdet, Jr therefore investigated iodism and found that the mishaps were as frequent with small doses, if not more frequent Piorry maintained his enthusiasm for iodin to the last, and reported good results from having tuberculous patients smoke cigarets impregnated with iodin

Medicolegal

Law Governing Physicians Is Law for Dentists

(Angulo Hallar (Md) 112 Atl R 179)

The Court of Appeals of Maryland in reversing, without granting a new trial a judgment recovered by the plaintiff who sued the defendant a dentist, for the alleged negligence and unskilfulness of his servant or employee in the extraction of the roots of a tooth for the plaintiff says that it was referred to no cases in Maryland in which a dentist had been sued for malpractice, nor does it recall any But there are a number of cases in which physicians and surgeons have been sued for malpractice, and there is no reason why the law laid down in those cases should not apply to dentists The law as enunciated in such cases is that a physician or surgeon who holds himself out to the world to practice his profession by so doing impliedly contracts with those who employ him that he possesses a reasonable degree of care skill and learning and he is therefore bound to exercise and is liable for the want of, reasonable care, skill and diligence and he is responsible in damages arising as well from want of skill as from neglect in the application of skill The cases are generally agreed on the proposition that the amount of care skill and diligence required is not the highest or greatest but only such as is ordinarily exercised by others in the profession generally But while it is the duty of the professional man to exercise ordinary care and skill, a duty imposed on him by law, it will be presumed, in the absence of proof to the contrary that the operation, or work, done by him was carefully and skilfully done And because of such presumption want of skill or negligence cannot be presumed but must be affirmatively proved

School Districts Cannot Maintain Clinics

(McGilvra et al Seattle School District No 1 et al (Wash) 194 Pac R 817)

The Supreme Court of Washington reverses a judgment which was rendered in favor of the defendants in this action wherein an injunction was sought to restrain the school district and its officers from maintaining in one of its school buildings, and expending funds of the school district for the maintenance therein of a so-called "clinic,' which might more properly be designated a "hospital," for the medical surgical and dental treatment of the physical ailments of the pupils of the school district whose parents or guardians were financially unable to furnish such treatment The court says that the question to be answered was Have the school district and its officers legal authority for furnishing the use of and equipping rooms in its buildings and the maintenance therein of such a clinic by the expenditure of the taxpayers funds collected and placed at their disposal for the sole purpose of maintaining the public schools of the district? Taking the whole of the law as found in the school statutes of the state which the court regards as lending any support whatever to the view that the school district and its officers possessed the powers which the officers were assuming, and threatening to continue to exercise, the court is quite unable to find in these statutes any power given to the school district officers other than the power to cause inspection of the buildings and premises of the district to be made with a view to making them sanitary and healthful, and to cause inspection of persons with a view to the exclusion from the school premises of all persons afflicted with contagious diseases to the end that such diseases shall not obtain a foothold among the pupils and other persons whose duties require them to be on the school premises Counsel for the school district officers called attention to, and relied on, the decisions of this court commonly known as the "playground" and gymnasium" cases, wherein it was held that a school district has the power to acquire, by expenditure of the funds of the district, additional land for playgrounds for the pupils, and also at the expense of the district to construct and equip gymnasiums, but the court does not think that those cases were of controlling force touching the present inquiry The rendering of medical, surgical and dental services to the pupils is and always has been, the court thinks, so foreign to the powers to be exercised by a school district or its officers that such power cannot be held to exist in the absence of express legislative language so providing The court sees no argument lending any substantial support, in a legal way, to the view that the school district and its officers possessed the powers they were seeking to exercise and threatening to continue to exercise There was much in the argument of counsel for the school officers which might be considered as lending support to the view that such powers ought to be possessed by the school district and its officers, and it was probable that counsel had many well meaning people on his side of that question The legislature may give heed to such arguments, but the courts cannot do so Wherefore the judgment of the trial court in favor of the defendants is reversed and the case remanded to that court, with directions to render a judgment enjoining the school district and its officers from furnishing or equipping on the school premises or elsewhere, appliances for the medical, surgical or dental treatment of the physical ailments of the pupils of the schools at the expense of the district and from employing physicians dentists or nurses for the rendering of such medical surgical or dental treatment, it being understood however that such injunction shall not restrain the school district or its officers from the doing of these things at the expense of the district in connection with, and as may be necessary in the maintenance of the parental schools of the district and the proper care of the pupils committed to such schools

Sufficient Visits by Physician

(Bass Pioneer Life Ins Co (Mo) 227 S W R 639)

The Kansas City (Mo) Court of Appeals, in affirming a judgment in favor of the plaintiff says that the action was one on a policy of health insurance which promised the plaintiff indemnity for disability from sickness for the number of consecutive days that he was necessarily and continuously confined within the house and therein regularly visited at least once a week by a regularly qualified physician Feb 14, 1919 he became ill from influenza, and was confined to his bed from that date to March 15 The testimony tended to prove that during that period his family physician called on him at his home on only two occasions, but that the physician received telephone calls and personal visits from relatives and neighbors on several occasions during the period, that the physician advised and prescribed for the plaintiff on such personal visits and telephone calls, and that he considered the plaintiff under his professional care during the period of illness The testimony further showed that at least once during the period of his convalescence the plaintiff called at the physician's office The defendant contended that the two calls made by the physician at the home of the plaintiff, and the telephone calls and personal visits of relatives and friends to the physician and the prescriptions of the physician, did not meet the terms of the policy requiring that the plaintiff should be "continuously confined within the house, and therein regularly visited at least once a week." But the court holds otherwise Obviously it says the meaning of the clause was that *the physician must be weekly in attendance* on the insured The physician called at the plaintiff's house on February 14 saw him in person diagnosed his case and thereafter during the period of his illness prescribed for him, and the insured was under his professional care To hold otherwise would be to make such a policy of insurance of very little value The court thinks that the contract should have a reasonable construction and be viewed in the light of common sense

Society Proceedings

COMING MEETINGS

Amer Assn of Obst, Gynec and Abdom Surgs St Louis Sept 20 22
American Electro Therapeutic Association Washington D C, Sept 7 10
Colorado State Medical Society Pueblo Sept 6 8
Delaware State Medical Society Rehoboth Aug 16
Minnesota State Medical Association Duluth Aug 24 26
Utah State Medical Association, *Salt Lake City Sept 13 14*
Washington State Medical Association Seattle Sept 2 3
Wisconsin, State Medical Society of, Milwaukee Sept 7 9
Wyoming State Medical Society, Casper, Sept 6 8

SOUTHERN MINNESOTA MEDICAL ASSOCIATION

Midsummer Session held at Winona June 27 and 28 1921

The President, DR W J MCCARTHY, Madelia, in the Chair

Surgery of the Ureter

DR E S JUDD, Rochester The most common operation on the ureter is for the removal of stones Stones are most often lodged in the lower third of the ureter, often very close to the ureterovesical juncture, and sometimes in the part of the ureter within the wall of the bladder Methods have been devised for safely dilating the lower end of the ureter and allowing stones in this location to pass This technic is so successful that it must be considered the treatment of choice in the majority of cases of stone in the lower third of the ureter In cases in which there is a great deal of infection, or in which the stone is very large, or when the patient does not bear the cystoscopic examination well, it is preferable to perform the open operation when the stone is in the lower part of the ureter, it is usually best to remove it by operating

Roentgen-Ray Diagnosis of Gastro-Intestinal Diseases

DR M J NESSA, Sioux Falls, S D Roentgen-ray diagnosis in diseases of the gastro-intestinal tract is efficient and reliable A resume of the clinical history should always be made in making the final diagnosis A preliminary examination of the chest should be made to rule out pathologic thorax Extrinsic pathology, such as genito-urinary gall-bladder and bone lesions must always be considered when present and associated with symptoms of so-called indigestion Variation in the position and tone of the stomach are factors which may influence the pathologic condition present Routine daily examinations until the colon is empty is good technic

Diagnosis and Treatment of Chronic Lesions of Hip Joint

DR F J GAENSLEN Milwaukee In the examination of hip lesions it is important to strip the patient completely and to conduct the examination according to a definite plan, just as the internist proceeds according to plan in the examination of the chest Unless this rule is followed it is very likely that errors will occur Inspection will disclose peculiarities in posture and gait, deviation from normal contour, awkwardness in removal of clothes, or in getting on the examination table Palpation will determine the presence of muscle *spasm, loss of normal muscle tone, elevation of surface temperature* and tenderness Mensuration is necessary to determine the degree of atrophy, apparent and real shortening, and disturbance in relation of Bryant's and Nelaton's lines The determination of range of motion, active and passive and careful recording of findings is important not only in establishing the diagnosis but also for purposes of comparison with future records The essentials in treatment are adequate fixation in plaster of Paris or a brace and relief from weight bearing In children, operative measures are indicated only in exceptional cases, while in adults operative ankylosis of the joint or arthrodesis, in other cases *resection*, may be called for when conservative treatment fails

The Child's Place in the Tuberculosis Campaign

DR. S A SLATER, Worthington Authorities tell us that 70 to 90 per cent of the human race is infected with tuberculosis before the age of 15 years, and that practically every one is infected before adult life If this is true infection is much more common than clinical tuberculosis since only about 10 per cent develop it in a clinical form It is this 10 per cent which offers the problem and needs to be cared for before the disease becomes active Special attention should be given to the child which is under par physically in order that he may overcome his physical handicap It is remarkable to see what improvement these children make when living under the proper conditions, of keeping regular hours and getting sufficient and nourishing food While many of these children are not suited for regular school work, they do well when placed in an open-air school with work adjusted to their strength If childhood is the time when infection takes place, it is the time when the one infected should be treated

Treatment of Sciatica

DR WILLIAM O OTT, Rochester The results of treatment by epidural injections of saline solution containing procain and the removal of foci of infection in thirty-four cases of sciatica observed in the Mayo Clinic during a period of two and one-half years form the basis of this study Of the thirty four patients treated by epidural injections, fourteen received one injection, and thirteen, two injections, four, three injections, two four injections, and one, five injections Nine patients received complete and permanent relief, fourteen received partial relief which allowed them to return to work, eleven did not receive any permanent benefit from the injection Temporary relief, that is, for from two days to two weeks either complete or partial, was obtained by thirty-one patients In the greater number of cases foci of infection were removed, either a few days prior or subsequent to the injection, which were probably an occasional factor in the cure In thirty-four cases of sciatica in which no definite removable cause could be found, the removal of possible foci of infection in 62 per cent combined with repeated epidural injections, gave a permanent cure in 27 per cent, and permanent amelioration of symptoms, so that the patients could continue their occupation with a fair degree of comfort in 40 per cent *33* per cent did not obtain permanent beneficial results

Parenteral Infections in Infancy

DR HENRY F HELMHOLZ, Rochester A breast-fed child, which had been doing well for months, became suddenly ill with vomiting and frequent stools On physical examination, the findings except for fever, were absolutely negative The urine was free from pus A cathartic was administered and the child seemed better the following day, but the fever still persisted Numerous small, grayish follicles were visible in the throat with considerable reddening about them The child was kept on reduced feedings, the temperature was normal on the third day, and the recovery was uneventful The patient on the first day appeared to be suffering from some primary gastro-intestinal disturbance, but by the findings in the throat the second day it was very evident that the disturbance of the intestines was secondary to the infection in the throat The use of the cathartic was indicated to remove any undigested food that might irritate the intestinal tract The uneventful recovery, therefore, would have made it appear that, had no further examination been made, the entire condition was due to intestinal disturbance

Comparative Values of Antisyphilitic Drugs

DR H E MICHELSON, Minneapolis In attempting to classify the various drugs, one must consider first which drug has the most profound effect on the visible lesions of syphilis and can be given with the least danger to the patient In our own experience arsphenamin and neo-arsphenamin have about the same action on lesions We believe that retrogression has been slower with sodium arsphenamin and silver arsphenamin We are certain that mucous membrane lesions have been quite resistant to silver arsphenamin Studies made on animals show neo arsphenamin to be the less toxic Silver arsphenamin has been given in long continued courses and has probably been better tolerated when so employed than when the other members of the group were used over a long time This very likely is due to the much smaller therapeutic doses The effect of all of the antisyphilitic remedies in their action on the Wassermann reaction is variable The personal factor must be considered, and since the same individual cannot receive two drugs under precisely the same

circumstances, it is utterly impossible to make an accurate comparison Nothing conclusive has been published to show that any member of this group of drugs possesses a selective action on any particular type of syphilis In all arsphenamin courses the patient must be watched carefully and questioned for early warning symptoms on the part of the organism against further amino-arsenicals, and the slightest significant symptom should cause the operator to delay subsequent injections in order to avoid grave accidents Until more evidence is at hand we emphatically urge that mercury be used in connection with courses of any of the arsphenamins We warn against overenthusiasm for any particular drug or regimen of treatment

AMERICAN GYNECOLOGICAL SOCIETY

Forty Sixth Annual Meeting held at Stampscott Mass June 2-4 1921

(Concluded from page 314)

Forced Labor

DR JOHN O POLAK, Brooklyn In 200 cases of labor in contracted pelvis, recently studied, we found that 81 per cent delivered spontaneously, or the labor was terminated with low forceps This certainly shows that each case of relative contraction is at least entitled to a proper test of labor before the abdomen is sectioned Furthermore, cesarean section is not without its morbidity and its mortality Beck showed that there was a 30 per cent morbidity in his study of 107 cases Rupture of the cesarean scar is not an unknown possibility, and in my collective study of 2,000 cases by the leading operators throughout the country, there was a mortality of nearly 10 per cent and of more than 2 per cent in the elective group Another procedure that should come up for consideration and comparison is hurrying the third stage of labor by expression of the placenta with the first uterine contraction after the child has been delivered This is definitely unphysiologic in that it takes time for the uterus by its contraction and retraction, to separate and expel the placenta and produce proper uterine hemostasis While this practice may be safe in the hands of the trained specialist it is bad practice and bad teaching for the practitioner and for students

Ovulation and Menstruation and Postoperative Considerations

DR THOMAS J WATKINS, Chicago The problem of the ovary relative to operative indications concerns the production of ova and corpora lutea Unanimity of opinion exists relative to conservation of the ovary when conditions obtain which are favorable to reproduction Opinions vary much in regard to conservation of the ovary for the purpose of production of corpora lutea The corpus luteum during menstrual life has been proved to be an important part of the endocrine system The physical changes that take place at puberty and the menopause emphasize the importance of the ovarian function The usual good health which obtains after the menopause is completely established, demonstrates the ability of the endocrine glands to compensate for the loss of the corpus luteum No clinical or theoretical evidence indicates that excision of the fibroid uterus compromises the life or function of the ovaries unless they are so situated that the operation disturbs their blood or nerve supply Conservation of menstruation has no value aside from its relation to reproduction

Interpretation of Vesical Symptoms in Gynecologic Diagnosis

DR F E KEENE, Philadelphia I cannot emphasize too strongly the importance of making cystoscopic examinations in all gynecologic cases presenting vesical symptoms even though the condition may seem quite sufficient to explain these symptoms Not infrequently, by such a plan lesions will be discovered which were unsuspected and which are of more vital import than those of the pelvic organs

Perforating Hemorrhagic (Chocolate) Cysts of Ovary

DR. JOHN A SAMPSON, Albany N Y Perforating hemorrhagic cysts of the ovary are hematomas of endometrial type These hematomas manifest their "activity" during the menstrual life of the patient Histologically, the epithelial lining of the ovarian hematoma is similar to that of the uterine hematoma owing to the retention of menstrual blood, often present in adenomyoma of the uterus Periodic hemorrhages occur in the ovarian hematoma which are similar in gross and histologic appearance to that of menstruating endometrium The chocolate contents of the ovarian hematomas resemble old menstrual blood That material escaping from the ovarian hematoma may give rise to the development of adenoma of the endometrial type in the tissues thus soiled is further proof that these hematomas contain endometrial tissue

Torsion of Cecum

DR SIDNEY A CHALFANT, Pittsburgh Torsion of the cecum, while a rare condition, does occur and must be considered in making a diagnosis in obscure cases of intestinal obstruction This is especially the case in patients presenting a history of obstinate constipation with previous attacks of severe pain in the upper abdomen.

Pneumoperitoneum as Aid to More Accurate Obstetric and Gynecologic Diagnosis

DR REUBEN PETERSON, Ann Arbor, Mich In suitable cases and with the proper technic, gas inflation is free from danger The method should not be used in cases of acute pelvic inflammation or when disturbances of circulation may arise from sudden abdominal distention As carbon dioxid gas is absorbed within half an hour, it is preferable to oxygen gas for inflation since the latter gas may not be absorbed for days Whenever possible the transuterine should be chosen in preference to the transperitoneal route for the introduction of the gas because of the valuable information it furnishes regarding the permeability of the fallopian tube

Bacteriology and Pathology of Fallopian Tubes Removed at Operation

DR ARTHUR H CURTIS Chicago Gonorrheal infection is responsible for at least three fourths of all inflammatory lesions of the fallopian tubes Infection with various types of streptococci has been second in frequency Tuberculosis, exclusive of generalized tuberculous peritonitis, ranks third Excepting a few streptococcus infections, bacteria have not been isolated from tubes which fail to show grossly active inflammation Just as gonorrheal endometritis seldom becomes chronic so it appears that gonorrheal infection of the tubes runs a quickly self-limited course The present study sustains previous experience that the colon bacillus does not cause serious tubal disease In streptococcus infection, tubal involvement is usually only a part of the picture Perisalpingitis is the most frequent type of tubal lesion, although typical salpingitis occurs with moderate frequency

Torsion of Uterine Adnexa Occurring Before Puberty

DRS RICHARD R. SMITH and WILLIAM J BUTLER, Grand Rapids, Mich Only twenty-six cases of torsion of ovarian tumors in childhood have been reported in the literature since 1900 About 50 per cent occurred between the ages of 8 and 10 Sixty per cent were dermoids The symptoms are those of an abdominal crisis similar to that of the same accident in adult life sudden abdominal pain, vomiting, a variable degree of prostration, tenderness rigidity, distention temperature increased pulse rate, and the presence of an abdominal tumor The diagnosis is usually difficult Appendicitis is often the preoperative diagnosis

Cure of Cystic Cervical Endometritis by the Aid of Multiple Scarification

DR HENRY T BYFORD Chicago Instead of using the ordinary lance pointed uterine scarificator only on cysts as they become apparent I use a bayonet pointed one and make from fifty to a hundred punctures into the diseased area or areas from once to twice a week and make an application of iodized phenol strong enough to destroy or cause atrophy of what remains of the epithelial cells in glands that are already seriously damaged by the inflammatory action, but not strong enough as used to destroy functioning glands The application consists of one part each of iodin crystals and glycerin and two parts of phenol A few treatments are made twice weekly and then once weekly until the surface looks and feels normal

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Disease of Children, Chicago

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*Degree of Immunity to Diphtheria Insured by a Negative Shick Test W H Park, New York—p 1
*Range and Distribution of Blood Pressures in Normal Children H K Faber and C A James San Francisco—p 7
*Tonsils and Scarlet Fever J G M Bullowa, New York—p 29
*So Called Inanition Temperature of New Born C G Grulee and B E Bonar, Chicago—p 44
Congenital Absence of Middle Portion of Esophagus F C Neff Kansas City—p 57
Recent Progress in Anatomy Physiology and Pathology of Childhood J B Holmes Baltimore—p 61

Degree of Immunity to Diphtheria Insured by Negative Schick Reaction.—A negative Schick test in cases which have an active immunity, either natural or acquired, when the toxin used and technic employed have been suitable, Park says, gives an almost complete security from diphtheritic disease, not only for the immediate time but for the future Those that have natural antitoxin and those who acquire it through toxin-antitoxin injections may harbor diphtheria bacilli, and if they later suffer from tonsillitis, due to other microbes, throat cultures will contain diphtheria bacilli The positive culture alone suggests but does not establish that the suspected case is one of diphtheria Under unusual conditions it is possible that when diphtheria bacilli are present in a throat which becomes the seat of some other infection they may develop their toxin and cause superficial lesions in the mucous membrane even though the cases have sufficient antitoxin to give a negative Shick reaction Cases which present this possibility are rare, and when met with by us have done well without additional injection of antitoxin In the outbreak discussed by Park the fact that while an extraordinarily large percentage of all the children in the institution were carriers of virulent bacilli, only one group developed cases of tonsillitis with pseudomembranous patches makes it uncertain that the cases were diphtheria

Blood Pressure in Normal Children—Normal means and standard deviations for systolic, diastolic and pulse pressure and for pulse and pulse pressure—pulse product have been compiled by Faber and James for boys and girls separately, by year, between the ages of 4 and 16 years Mean systolic pressure shows no significant difference between the sexes within the period studied Mean diastolic and mean pulse pressure do show significant sexual differences Standard deviations are in practically all cases greater for girls, indicating a normally greater variability in female children which is particularly marked during adolescence Illustrative examples of the method of measuring deviations in various pathologic states are given The method, while involving the use of the reference tables, requires only a few seconds to apply

Tonsils and Scarlet Fever—Bullowa presents evidence which he believes lends support to the view that the inflamed tonsil is a focus of infection and that the cervical lymph nodes enlarge from it in scarlet fever just as they might enlarge in the absence of scarlet fever The inflamed tonsil becomes a phlegmon on the wall of the pharynx Rhythmic swallowing movements when they compress the tonsils force toxins or organisms into the lymph stream with subsequent inflammatory reaction in the adjacent lymph nodes Prophylactic removal of the tonsil when buried or covered with plica or incision of the plica so as to uncover the tonsil prevents some of the severe complications arising from this source Painstaking observation of the tonsil during scarlet fever is helpful and leads to the view that the infection is conditioned by the anatomic relations In certain selected cases, tonsillectomy may be performed with benefit during scarlet fever

Inanition Temperature of New-Born—A careful study of observations made by Grulee and Bonar of 182 infants failed to reveal any regular relationship between the inanition or transitory fever of the new-born and the quantity of fluid ingested, nor did it reveal any definite relationship between the percentage of weight loss and the temperature The authors, therefore, conclude that the temperature rise in question is not regularly to be explained on the basis of dehydration, and since clinically the condition is clear cut, it would seem likely that the explanation for this fever must be made on some other basis There could be very little doubt that forcing of food after this temperature has risen is accompanied by a fall so rapid that it seems more than likely that there is a definite causal relation between the taking of food and the fall of temperature It has been suggested that meconium is a poor medium for the growth of bacteria With the stimulation to digestion and the flow of the gastric and intestinal juices produced by the taking in of food the meconium is unquestionably mixed with large quantities of fluid and hence would be rendered a better material for the growth of bacteria Meconium consists almost entirely of protein material the destruction of which would most readily account for the presence of indican in such a large proportion of urines from new-born infants With the addition of breast milk to the diet, the putrefactive processes in the intestine are reduced It seems most likely that temperature elevation at this time may be ascribed to the absorption of some protein products, bacterial or otherwise from the intestines of the new-born That the condition does not give rise to more serious symptoms than are present may be explained by the transiency of the fever period and by the rapid change of the condition within the intestinal canal

Annals of Otology, Rhinology and Laryngology, St Louis

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Etiology of Acute Inflammations of Nose Pharynx and Tonsils S Mudd S B Grant and A Goldman—p 1
Borderland of Otolaryngology and Ophthalmology H W Loeb and M Wiener St Louis—p 74
Developmental Anatomy of Temporal Bone L Rogers Minneapolis—p 103
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Report of Cases 1 Simple Mastoidectomy on Man 81 Years Old 2 Infective Sigmoid Sinus Thrombosis—a Positive Blood Culture with Streptococcus Mucosus Capsulatus Present J W White Norfolk, Va—p 199
Lethargic Encephalitis as Postoperative Complication of Acute Mastoiditis Report of Case M J Siegelstein New York—p 201
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Illinois Medical Journal, Oak Park

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Journal of Orthopaedic Surgery, Lincoln, Neb.

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Possibilities of Suture After Extensive Nerve Injury M F Brown Bangour—p 277

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Journal of Urology, Baltimore

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*Primary Carcinoma of Kidney with Impacted Ureteral Calculus H G Bugbee New York—p 267
Varying Types of Prostatic Obstruction A Randall Philadelphia—p 287
Treatment of Gonorrhea and Its Complications with Vaccines W W Townsend Burlington Vt.—p 309
Stopcock and Fittings for Attaching Chismore Evacuating Bulb to Buerger Cystoscope V C Pedersen New York—p 313
*Relation Between Spina Bifida Occulta and Certain Cases of Retention A L Chute Boston—p 317
*Primary Carcinoma of Male and Female Urethra R F O'Neil Boston—p 325
*Tuberculosis of Kidney Complicated by Impacted Pelvic Calculus H A Fowler—p 345
*Use of Mercurochrome As General Germicide H H Young E C White and E O Swartz Baltimore—p 355
Fluoroscopic Examination of Injected Kidneys and Report of Case F R Hagner—p 389
New Combined Cystoscopic and Roentgen Ray Table H H Young Baltimore—p 391

Primary Carcinoma of Kidney—Bugbee's patient was a man aged 44 who gave a history of renal colic as far back as 1892. Fifteen years ago he had another attack, following which he noticed that after riding horseback his urine was sometimes claret-colored, but he had no colic or other urinary disturbance. He had no serious illness or urinary symptoms until October, 1918, when he had a severe attack of influenza. Two weeks after the onset of the influenza he developed profuse hematuria, pain and tenderness in the left upper quadrant and left lumbar region. Later moderate frequency and urgency of urination were noted, and a mass was palpable in the left upper abdomen. He rapidly lost flesh and strength, became decidedly anemic. There was an indefinite mass in the left upper quadrant and lumbar region, which was not hard, was slightly tender and movable. The right kidney could not be felt. The external genitalis, prostate and vesicles were negative. A roentgenogram revealed a large oval calculus in the left ureter at the point of obstruction to the catheter 25 cm. from the bladder. Pyelogram showed the renal pelvic outline destroyed. The preoperative diagnosis was impacted uteral calculus and pyonephrosis. The postoperative diagnosis was primary carcinoma of the kidney. The patient died five months later.

Spina Bifida Occulta and Retention.—The mechanism of the retention in these cases, Chute believes, is probably an interference with the nerve supply of the detrusor due to a pulling or to a pressure on fibers of the cauda which results in a partial paralysis of the muscle. As the cause of the retention in these patients is probably due to a mechanical interference with fibers of the cauda, it is useless to look for permanent relief by any means other than attacking the problem mechanically at the point where the interference has taken place. Operations carried out for the relief of symptoms caused by spina bifida occulta in general have consisted either in dissecting out the fatty fibrous mass pressing on the cord or cauda or in separating the nerve fibers that are attached to the scar that fills the bony defect in the vertebral canal. Usually this is followed by a plastic operation to close the defect in the body canal. These operations have not been as a whole very satisfactory, but they have occasionally given remarkable results. They seem to be attended with neither the mortality nor the discouraging results that have attended most operations on cases of ordinary spina bifida cystica. It would seem probable that the earlier these operations were carried out, the more hopeful the outlook for the restoration of the bladder function. In some cases of long duration a pressure myelitis has developed. Chute believes that this condition of spina bifida occulta will be found to explain certain very perplexing and trying bladder conditions.

Primary Carcinoma of Urethra—Two cases are reported by O'Neil, and the literature is reviewed. From the age of the reported cases, the disease rarely occurs before 50. Among the predisposing causes trauma is mentioned also leukoplakia resulting from chronic urethral irritation. Stricture is present in more than 50 per cent of the cases. In the majority of the cases the bulbous urethra is the seat of the neoplasm. The early symptoms are not characteristic of the malignant nature of the lesion and are generally such as would coincide with the ordinary urethral stricture. One of O'Neil's cases was typical in history and examination of urethral stricture with abscess, but no pus was found on incision, instead, a brittle cavity surrounding the bulbous urethra, the tissue removed showing carcinoma.

Impacted Pelvic Calculus in Tuberculous Kidney—That true stone and tuberculosis do at times occur in the same kidney is shown by Fowler's case, in which the stone was impacted in the pelvic ureter, causing complete obstruction. By reason of the occlusion Fowler was unable to obtain any secretion from the right kidney, and was unable, therefore to determine the nature of the tumor mass before operation. The real pathology was not suspected until the excised kidney was examined.

Mercurochrome as General Germicide—The authors report on 187 cases of urethritis, 40 cases of cystitis and 17 cases of pyelitis, treated with mercurochrome. Mercurochrome is an effective germicide but has not proved to be vastly superior to all other drugs in acute gonorrhea, although certainly quite efficient. The intense stain is a drawback to its use as an injection by the patient. Acriflavine is free from this objection. In chronic infections of the urethra, prostate and vesicles its great value has been amply proven. It penetrates deeply and may be found in the prostatic secretion several days after posterior instillation. The results obtained in many cases of chronic cystitis are remarkable, long standing infections often clearing up in a few treatments. The coccus infections are more resistant to mercurochrome than the colon bacillus infections. In some cases which fail to become sterile constant reinfection of the bladder is found to occur from kidneys or prostate. Mercurochrome is less irritating and produces less reaction in the renal pelvis than silver nitrate solution, while possessing about equal germicidal powers but in some cases both drugs should be used alternately and sometimes silver is better. Continued use has proved mercurochrome to be a most satisfactory dressing for venereal ulcerations and buboes. In general surgery, reports indicate that mercurochrome is very valuable in dressing open wounds and sinuses. The germicidal efficiency of the drug in other branches of medicine and surgery has been proved especially in the treatment of infections of the throat, nose sinuses, ear and eye. It is reported to be most efficient in disinfecting the throats of diphtheria carriers.

Laryngoscope, St Louis

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*Experiences with Lyon Meltzer Method for Diagnosis of Gallbladder Disease. J E Cook and L F Wilhelm St Louis—p 230
Pompholyx R C Lounsberry Springfield—p 232

Lyon-Meltzer Method of Diagnosis of Gallbladder Disease—Their experience does not encourage Cook and Wilhelm to attach gerat diagnostic weight to evidence obtained by means of the Meltzer-Lyon method, mainly for the reason that too often there is doubt as to the source of the bile obtained

Nebraska State Medical Journal, Norfolk

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New Jersey Medical Society Journal, Orange

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New Orleans Medical and Surgical Journal

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*Hemorrhage into Upper Digestive Tract with Especial Reference to Arterial Disease as Cause S K. Simon New Orleans—p 13
*Treatment of Granuloma Inguinale W A Reed and M Wolf New Orleans—p 25

Hemorrhage Into Digestive Tract—The occurrence of massive hemorrhage into the digestive tract has been observed by Simon in three patients, as a result, apparently in each instance of a diseased state of the arterial system with especial localization in the vessels of the stomach and duodenum While the presence of arterial disease could not be verified, because of lack of opportunity for direct inspection at the site of the hemorrhage, nevertheless the close association exhibited by the vascular accident in each case, with a manifestly morbid state of the arterial system as a whole has seemed sufficient to warrant the assumption of some definite relationship between the two conditions

Treatment of Granuloma Inguinale—The old classical form of treatment having failed to yield any results in these cases Reed and Wolf infected tartar emetic intravenously Solutions of antimony and potassium tartrate are prepared with freshly distilled sterile water in 1 per cent strengths and intravenous injections are given at intervals of from three to seven days starting with an initial dose of from 2 c c and increasing the amount 2 c c each time until therapeutic results are obtained Some of these patients are receiving as much as 14 c c at an injection A few slight and transient reactions have been observed A sudden paroxysm of coughing occurred in one case immediately after the injection and in another diarrhea and vomiting occurred These two reactions occurred on reaching a dose of 8 and 10 c c, respectively The authors have been able to demonstrate the Donovan bodies in three of these cases and at the present time are endeavoring to grow cultures of the organism with a view of inoculating experimental animals if possible

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*Radiography as an Aid in Differential Diagnosis of Pulmonary Disease J S McLester Birmingham—p 511
Fluid in Pleural Cavity W W Rucks Oklahoma City—p 517
*Diabetes Mellitus in Negro Race I I Lemann New Orleans—p 522
Diagnosis and Treatment of Tuberculous Colitis A. W Calloway Asheville N C—p 525
Malnutrition in Children After First Year of Life L T Royster Norfolk Va—p 532
Milk and Butter in Nutrition of Childhood W H Donnelly Brooklyn—p 539
Birth Trauma W D Hereford Huntington W Va—p 542
*Ligation of Superior Thyroids in Patients with Exaggerated Toxic Symptoms E G Jones Atlanta Ga.—p 545
Conservation in Skull and Brain Injuries J S Turberville Century Fla—p 551
*Case of Tuberculosis of Fascia J H Blackburn, Bowling Green Ky—p 556
*Surgery of Bones and Joints Description of New Operative Technic M Skinner Selma Ala—p 558
Treatment of Fractures and Dislocations F G Hodgson Atlanta—p 566
*Diverticulum of Ureter J H Neff University Va—p 568
Hydatidiform Moles Case Report C R Hannah Dallas Tex—p 572
Operative Treatment of Chronic Suppurative Otitis Media Comparative Indication of Radical and Modified Radical Operation W K Simpson Memphis—p 574

Roentgenography in Diagnosis of Pulmonary Tuberculosis—McLester summarizes his paper by stating that radiography in diseases of the lung will point at times unerringly to the correct diagnosis, at other times it will be of small value or entirely misleading, at all times it must be regarded merely as one phase of clinical inquiry

Diabetes Mellitus in Negro—Lemann's analysis of the hospital records of 160 044 patients with reference to the incidence of diabetes shows that this disease occurred in 0.86 per thousand negroes and 1 4 per thousand whites All told

there were 194 cases of diabetes among the 160,044 admission Diabetes is less common among the negroes than among the whites The negro portion of the admissions is roughly 40 per cent, the negro portion of diabetes is 30 per cent but the negro portion of such diseases as syphilitic iritis, gumma of the brain, gumma of the liver, aneurysm of the aorta, is 60 and 70 per cent The negro portion of all cases of acquired syphilis is 56 per cent and of congenital syphilis 52 per cent If syphilitic pancreatitis is the chief or even a frequent factor in the production of diabetes, Lemann thinks it is strange that one does not see an abundance of diabetes in the negro services of the hospital which are so rich in all other syphilitic phenomena It is fair to conclude he says, that syphilis is playing on important part in producing diabetes

Ligation of Superior Thyroids —Jones analyzes replies received to a questionaire sent to the surgeons as to the results of ligation of the superior thyroids for goiter On the whole the procedure is endorsed

Tuberculosis of Fascia —Blackburn's case was one of multiple cold abscesses which were metastases from a primary focus in the genito-urinary tract, limited by the fascia of different regions of the body At no point was there a direct extension from a primary bone or lymphatic focus as is usually found

Muscle Flap for Hip Arthroplasty —Instead of using a fat and fascia flap for interposition between the head of the femur and the acetabulum, Skinner dissects up the two outer glutei from their point of insertion into the trochanter and then perforates this muscle flap at its base, threading the great trochanter through the perforation so that the two outer glutei muscles drop naturally in between the bones and they are quite thick enough and broad enough to prevent ankylosis

Diverticulum of Ureter —In the only two cases of this kind on record Neff says the defect was discovered after death and apparently had caused no harm during life His own patient had had twenty or thirty typical attacks of right-sided renal colic At operation he found about 8 cm above the bladder a diverticulum coming off from the posterior lateral aspect of the ureter The diverticulum was removed and the opening in the ureter repaired with interrupted sutures of catgut The diverticulum measured 13 cm in length and 2 cm in diameter at the point of its ureteral attachment

Tennessee State Medical Ass'n Journal, Nashville

June 1921 **14**, No 2

Present Status of Practice of Medicine and of Medical Education L L. Sheddan Knoxville —p 41
Treatment for Concomitant Squint Plea for Early Operative Interference in Children New Operation O Wilkinson Washington D C —p 52
Classification of Streptococcus L Arnold Nashville —p 56
Treatment of Catarrhal Deafness with Especial Reference to Tinnitus Aurium R McKinney Memphis —p 62

Wisconsin Medical Journal, Milwaukee

June 1921 **20**, No 1

Use of Stimulants in Pneumonia L M Warfield Milwaukee —p 1
Surgical Treatment of Empyema Complicating Pneumonia W Cunningham Platteville —p 4
Pathology of Pneumonia Found in Recent Epidemics of Influenza D Hopkinson and E L Tharinger Milwaukee —p 10
Local Anesthesia in Thyroidectomies H F Derge Eau Claire —p 14
Megacolon T W Nuzum Janesville —p 17
*Sacro Iliac Joint Arthrodesis by Bone Splitting Method F J Gaenslen Milwaukee —p 20

Sacro-Iliac Joint Arthrodesis —The operative plan described by Gaenslen has been used in four cases, brief reports of which are given A curved incision is made parallel to and about one-half inch above the crest of the ilium through the skin and subcutaneous tissue, extending from just behind the middle of the crest to the posterior inferior spine of the ilium The flap is then dissected free to the outer margin of the crest With a broad, flat chisel the posterior portion of the ilium is split to a depth of about two and a half inches into an inner and an outer leaf The outer flap is broken at its base and deflected outward as far as possible, stripping off the periosteum from the adjacent portion of the ilium just below and anterior in order to increase the working space The inner leaf of the split portion of the ilium is cut on a level with a point just above the posterior inferior spine to the extent of two inches A vertical cut about one and a half inches in length is made from the anterior end of this incision extending toward the crest of the ilium at a point joining the middle and posterior third of the crest The two points are now joined with a third chisel cut a triangular piece of bone, therefore, being removed The destruction of the joint is begun at the lowermost border of the sacro-iliac joint where it is plainly in view, and is carried forward from this point, working forward and slightly outward in general in the direction of the anterior superior spine of the same side After eradication of the joint the deep trough is filled up with healthy cancellous bone chips removed during the course of the operation The deflected outer leaf of the ilium is then brought into position and sutured along the crest to the inner leaf of the ilium which has been allowed to remain standing In several cases the inner leaf was broken off toward the medical side, but in perfecting the technic of the operation on the cadaver it was found that the inner leaf could be left standing without adding to the difficulties of the operation

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FOREIGN

Titles marked with an asterisk (*) are abstracted below Single case reports and trials of new drugs are usually omitted

British Journal of Experimental Pathology, London

June 1921 **2**, No 3

*Reaction of Blood in Secondary Anemia C L Evans —p 105
Mechanism of Autolysis in Paroxysmal Hemoglobinuria W Yorke and J W S Macfie —p 115
*Antigenic Properties of Acetone Extracted Bacteria S R Douglas and A Fleming —p 131

Blood Reaction in Secondary Anemia —Although the immediate effect of hemorrhage is a lowering of the alkali reserve of the blood, Evans claims that the response of the respiratory centers may partially compensate, or even overcompensate, for this change, so that the circulating blood may be either more acid, or less acid, or of the same reaction even after as before the hemorrhage After twelve hours the reduction in alkali reserve is compensated, owing to increased excretion of acid by the kidney, subsequently the alkali reserve of the blood may become higher than the normal and remain at this level until the corpuscular regeneration is complete The response is a protective one against acidosis

Antigenic Properties of Acetone Extracted Bacteria —Douglas and Fleming state that acetone-extracted bacilli form a convenient way of storing bacilli and apparently keep their antigenic properties unchanged indefinitely They are very easily dissolved by tryptic and other proteolytic ferments When employed as vaccines, acetone-extracted bacilli appear to have antigenic properties fully as great as vaccines made by other methods They also form a very suitable antigen for use in complement fixation tests Suspensions of these extracted bacilli are agglutinated by immune serum only after a long period and by dilutions more concentrated than is the case with suspensions of living or formolised bacilli Preliminary experiments appear to show that acetone-extracted bacilli which have been digested with trypsin when injected into animals produce a marked increase (equal to or greater than undigested bacilli) of the bactericidal power but the increase of the agglutinating power is very much less marked

British Medical Journal, London

June 25 1921 **1**, No 3156

*Intrinsic Cancer of Larynx St C Thomson —p 921
*Hematuria as Seen by Surgeon A Fullerton —p 923
*Schick Reaction G Ward —p 928
Treatment of Syphilis in Macedonia on Active Service T H Fowler —p 930
Retrograde Catheterization for Impermeable Stricture of Urethra W J Foster —p 931
Suggested Autoinoculation of Rodent Ulcer S C Dyke —p 932
Pernicious Anemia Repeated Doses of Calomel Recovery J C Ferrier —p 932
Primary Organism in Cultures C B Dyson —p 932
Tartar Emetic for Venereal Granuloma W E. Giblin —p 932

Intrinsic Cancer of Larynx—An analysis is made by Thomson of fifty cases. Intrinsic cancer of the larynx originates on the vocal cords or in the subglottic area. It has never been found in the posterior commissure (interarytenoid region), nor originating from the ventricular bands or the ventricle of Morgagni in fifty cases carefully examined both indirectly with the mirror and by direct inspection after splitting the larynx. A malignant growth may originate on any part of a cord, but is more common in the central portion or anterior half than in the posterior area of the larynx. As is now well known, an epithelioma originating in this region remains for a long time limited to the cord affected and the adjoining side of the larynx, but it may cross the anterior commissure, and, in later stages, it invades the arytenoid and the area to the outer side of it. The inner surface of the cord may be affected primarily or by extension. The subglottic area may be invaded by a growth originating in a cord. But a cancer may also start below the level of the cords in the subglottic area. A subglottic cancer is much more in the anterior than in the posterior half of the larynx. As regards prognosis: The superficial or projecting tumors of limited extent are the most favorable. Those situated in the middle third or anterior half of the cord are more promising than those invading the anterior commissure in front or the arytenoid region behind. Growths embedded in a cord or extending into it below an intact mucosa are not so favorable. An epithelioma extending along the inner margin of a cord is still less favorable. Subglottic cancers are very unpromising as regards lasting cure by laryngofissure. They are frequently associated with impaired mobility or complete fixation of a cord. As regards operation: In every case, however limited the growth, the entire vocal cord should be excised from the anterior commissure up to and including the vocal process of the arytenoid. The growth, with as wide a margin as possible of apparently healthy tissue all round it, should be removed in one mass, the excision should therefore go down to the lower edge of the subglottic area, above, it should pass through the healthy ventricular band and externally it must include the perichondrium lining the thyroid ala. To facilitate this the thyroid ala should be removed so that a laryngo fissure is really a partial hemilaryngectomy.

Hematuria.—Tuberculosis of the urinary tract is very common in the North of Ireland. Nearly 10 per cent of all cases cystoscoped by Fullerton had urinary tuberculosis, and in 75 per cent of these hematuria was present. In the overwhelming majority the primary focus, as far as the urinary tract was concerned, was the kidney. In Fullerton's experience tuberculosis of the bladder, arising secondarily to deposits in the epididymis and testicle is comparatively rare. Primary tuberculosis of the bladder, if it occurs at all, is so rare that such a diagnosis should not be made except after the most careful examination of all parts of the urinary tract. The character of the hematuria in most cases of tuberculosis of the urinary tract resembles that found in bad cases of cystitis. The blood comes for the most part from ulcers on the bladder wall. Severe hematuria from the kidney is not, in Fullerton's experience, frequent. He has seen forty-seven cases of renal hematuria in which it was the only symptom of disease except for some renal colic in a few due no doubt, to the passage of small clots down the ureter. In forty-four cases of renal calculus, out of sixty-one examined, the presence of blood was noted. The two cardinal signs of renal calculus are renal colic and hematuria one or other or both of which may be entirely absent. Vomiting is also frequently present. Radiography will detect the smallest calculus. Hematuria was found in 113 cases of cystitis. In all it was moderate and was often only discovered on microscopical examination. When visible it was generally of the terminal type occurring at the end of micturition in the form of a few drops of blood with the last drops of urine. In some cases and especially in those known as hemorrhagic cystitis blood was mixed with the main part of the urine, although more pronounced in the last portion. Some of the most severe cases of hematuria met with were due to tumors of the bladder. In some cases, however, the hemorrhage was trifling—at any rate in the earlier stages. Out of forty six cases of vesical calculus examined the presence of blood is mentioned in thirty-four. Other conditions in which hematuria occurs are also discussed by Fullerton.

Schick Reaction.—Ward has made a careful study of this reaction. The test has given her very definite data as to which years are the most dangerous with regard to diphtheria infection in a child's life. These are between 6 months and 6 years, while the periods of lowest susceptibility appear to be under 6 months and over 15 years. These results are endorsed by clinical experience. It is of great value in deciding the difficult question of whether a patient is a carrier or is really suffering from diphtheria. It has, perhaps its greatest value in showing to whom among persons exposed to infection (for example, contacts doctors and nurses) we may safely omit to give antitoxin—thus greatly minimizing the risk of anaphylaxis and also saving pain and expense. When possible, only those nurses who give a negative Schick reaction should be employed in diphtheria wards. Ward was able by means of the Schick test to ascertain, in cases which have previously had the disease or have had antitoxin, to what extent their immunity persists, and whether they have sufficient antibodies to overcome a fresh infection.

China Medical Journal, Shanghai

May 1921 **35**, No 5

Artificial Feeding of Foreign Babies in China. H. B. Taylor.—p. 193
Parasites of Vertebrates of North China. F. C. Faust.—p. 196
Treatment of Trachoma. C. C. Rush.—p. 211
Fibroma Molluscus: Report of Extensive Case. I. S. Tyau.—p. 213
Postoperative Catheterization. R. G. Mills.—p. 217
Report of Research Committee of China Medical Missionary Association on Pulse and Blood Pressure in Normal Individuals. W. W. Cadbury.—p. 242
Analyses of Some Chinese Foods. H. Embrey and T. C. Wang.—p. 247
Pathology and Its Relation to Medicine. C. Y. Wang.—p. 258
Case of Hydatidiform Mole. W. C. Sweet.—p. 264
Value of Hospital Records. L. T. Heimburger.—p. 265

Four Thousand Tumors in Case of Fibroma Molluscum.—In 1880 Hashimoto reported a case of fibroma molluscum with 4 503 growths. In Tyau's there were 7,241 tumors. The man was 54 years of age. These growths began at 14. Although he was thickly covered from head to foot with nodules of various sizes there was no feeling of pain or itching no discomfort beyond a little inconvenience. His health and weight were not affected in the least until latterly. Two months ago he had an attack of dysentery with muco sanguinous stools numbering over ten times a day. This obliged him to lie in bed for a month. He then noticed pressure sores on his back followed by ulceration of the larger nodules over the lumbar region and nape with slight pain and offensive discharge. His entire body was well covered with profuse numbers of nodules most thickly over the back then the head neck upper extremities chest and a few on the lower parts of the body. The palm sole and axillary regions remained free. There were also a few small nodules in the conjunctiva the upper lip and palate. A great number of these growths were deeply imbedded in the subcutaneous tissue as proved by necropsy and these were not included in the grand total of 7,241. In size, they varied from that of a pinhead to that of a large potato in shape the smaller growths were mostly round and slightly elevated while the larger ones were pedunculated pendulous round or pyriform.

Glasgow Medical Journal

May 1921 **13** No 5

*Examination of Blood in Cases of Cancer of Breast in Regard to Operation and Prognosis. E. D. Anderson.—p. 321
Defects in Cardiac Rhythm in Relation to Cardiac Failure. G. A. Allan.—p. 333
Cookery and Digestion. J. Adam.—p. 351

Blood in Breast Cancer.—In addition to breast cases, cases of cancer of the uterus lip tongue and stomach which were diagnosed clinically before operation were also examined by Anderson. Of thirty cases examined, twenty-one were seen before operation. The average leukocyte count of these cases was 8 962 per c. m., and the average of the first count after operation in twenty cases (one being inoperable) was 7 410 per c. m. Eleven of the twenty one patients has a

leukocyte count of over 10,000 per c m before operation The highest leukocyte figure obtained in the thirty cases was 14,400 One week after operation A fortnight later the leukocytes had fallen to 7,800 per c mm Five months later the leukocytes numbered 9,800 per c mm The changes in the number and appearance of the red cells were not very outstanding The hemoglobin figure ranged from 40 to 75 per cent The color index figure showed little change after operation In none of the innocent cases was there a leukocyte count of over 10,000, either before or after operation

Indian Medical Gazette, Calcutta

May 1921 **56**, No 5

Plea for More Frequent Use of Intravenous Medication with Special Reference to Use of Iodin J W Porter —p 161
*Modified Bassini Method for Radical Cure of Hernia by Plication and Overlapping of Externus Obliquus Abdominis K K Chatterji —p 162
Chronic Lead Poisoning in Printing Presses of Calcutta J J Campos —p 175

Modified Bassini Method for Cure of Hernia —After suturing the internal oblique muscle with Poupart's ligament, thus closing the inguinal canal and forming a floor for the cord, Chatterji lets it repose on it He overlaps the external oblique in Halstead fashion and, while doing so, plicates its fibers, taking in here and there a few fibers of the internal oblique and transversalis This strengthens the anterior wall and at the same time does not split the fibers of the external oblique, as in Halstead's operation

International Journal of Psycho-Analysis, London

1920 **1**, No 4

Child is Being Beaten Contribution to Study of Origin of Sexual Perversions S Freud —p 371
Erotism as Portrayed in Literature F J Farnell, Providence R I —p 396
Note on Hazlitt L C Martin —p 414
Trivial Incident X —p 420
Word Play in Dreams D Bryan —p 423

Japan Medical World, Tokyo

June 20, 1921, **1**, No 2

*Experimental Study on Prophylactic Inoculation of Typhus Fever S Kusama —p 1
*Prophylactic Inoculation in Human Against Scarlet Fever I Takahashi —p 4
So Called Digestive Ulcer of Gastro Intestinal Tract S Goto —p 7
Beri Beri Like Disease in Mammalian Animals M Murata —p 12
Transplantation of Rat Sarcoma in Adult Heterogeneous Animals Y Shirai —p 14

Experimental Prophylactic Inoculation Against Typhoid —None of the twelve monkeys that had been injected by Kusama either hypodermically or intravenously with such a small quantity of the virus as one-tenth or less of the minimum morbid dose had a febrile attack This fact is important for the virus was injected without being attenuated The degree of the immunity thus obtained was not the same with all the animals, as in the first experiment the hypodermic prophylactic injection protected the animals against fifty times the minimum morbid dose, in the second experiment, in which the prophylactic injection was made both hypodermically and intravenously, the animals were protected against five times the minimum morbid dose and in the third experiment, the hypodermic prophylactic injection protected the animals against five times the minimum morbid dose The virulency of the blood of the experimentally infected monkeys was the strongest on the first and second days of the symptomatologic attack and gradually decreased in the course of the disease until it becomes at the end of the pyrexia scores of per cent less virulent than its maximum The intravenous injection produces a severer attack of the illness than the hypodermic

Prophylactic Inoculation Against Scarlet Fever —Blood was obtained by Takahashi from the median vein of a scarlet fever patient, on the sixth day of illness The blood was transferred to four test tubes containing certain amounts of citrated solution so that 1 c c of the final solution in the test tubes had 0 0001 c c of the blood of the patient Thus the blood was diluted 10,000 times with the physiologic sodium chlorid solution containing 1 sodium citrate This dilution was used as the injection materials From 0 5 to 1 c c of the solution were injected subcutaneously in the interscapular region of the author's five children In all the cases there was no local reaction or general symptoms Blood was obtained again from another scarlet fever patient on the sixth day and diluted with citrated (1 per cent) physiologic sodium chlorid solution so that 1 c c of the final dilution had 0 1 c c of the blood Neither local reaction nor general symptoms were observed in the four children injected The results of these experiments prove Takahashi says that the injection of 0 0001 c c of the blood of a scarlet fever patient into children produces no reaction, but renders a certain degree of active immunity so that the introduction of the virus contained in 0 15 c c of the blood of the scarlet fever patient is completely prevented from causing the disease

Lancet, London

July 2 1921 **2**, No 5105

*Injuries of Diaphragm Special Reference to Abdominothoracic Wounds C W B Bryan —p 1
*Feces in Alimentary Disorders R Coope —p 9
*Unusual Type of Arrhythmia in Mitral and Aortic Disease M Davidson and H G Butterfield —p 12
*Lymphadenoma and Tuberculosis I Fox —p 14

Abdominothoracic Wounds —In operations for strangulation and acute obstruction, Bryan says the abdominal route will be employed, as a rule In chronic cases, the thoracic method of approach has certain advantages, it allows adhesions to be divided under better observation, with more safety and better control of bleeding, the stomach pouch can be emptied before reduction, accurate suture of the diaphragm and any plastic measures demanded can be carried out more satisfactorily, and the pleura can be cleansed and its dryness insured at the end of the operation If special difficulties arise, or a gastrojejunostomy is indicated, the thoracic operation is converted into an abdominothoracic one by prolonging the incision In all types of operation the pleural cavity is open, so that the slight risks of operative pneumothorax are equally present

Feces in Alimentary Disorders —Coope insists that examination of the feces must be integrated with the clinical findings usually with a thorough examination of the urine, sometimes also of the blood Not infrequently it provides data which the clinician finds very valuable in making his diagnosis

Arrhythmia with Myocardial Degeneration —The case reported by Davidson and Butterfield revealed an extensive degree of myocardial disease in a heart so distorted owing to pathologic changes that identification of the auriculoventricular node and bundle in serial sections was a matter of great difficulty The fibrosis, which was visible throughout the entire musculatura, appeared to have left the fibers of the bundle intact The clinical features of the case also were unusual The arrhythmia is striking, and at first suggests the appearance seen in tracings from patients who have been for some time under the influence of digitalis, and have reached the toxic stage where the familiar coupling of the beats is observed However digitalis was not given the patient except for one emergency injection of digitalin and there was no reason to suppose that he had been previously taking the drug outside the hospital There is not sign of an *a* wave in any of the tracings, and the jugular pulse is of the ventricular type It was concluded that the auricles were fibrillating although the pulse did not at any time show the typical continuous irregularity There was always an absence of any presystolic murmur at the apex, although the left auricle was greatly enlarged, and there was an extreme degree of mitral stenosis The third of the *c* waves which correspond with the third sound already mentioned, is apparently due to a second premature contraction of the ventricle, which, although audible to the stethoscope, was never strong enough to affect the radial tracings The first premature contraction, represented by the second of the *c* waves, can just be detected in places in the radial tracing, but could never be felt in the pulse at the wrist From the character of the attacks of semi-unconsciousness and the extreme slowness of the pulse (26) during some of these, the condition

appeared clinically to resemble that of heartblock, but no evidence appears in the tracings of independent auricular contraction, and the auriculoventricular bundle was subsequently shown to be structurally intact

Lymphadenoma and Tuberculosis—No gross tuberculosis lesion was found postmortem in Fox's case, the only microscopic changes being those of Hodgkin's disease of abdominal type In the affected glands and spleen, tubercle bacilli were found in fairly large numbers, for the most part without other cellular reaction than one which appears to be that generally described as peculiar to Hodgkin's disease

Medical Journal of Australia, Sydney

June 4 1921 **1**, No 23

Dysenteric Infections H R Dew and N H Fairley—p 453
Epidemic Diarrhea S W Patter and F E Williams—p 460

Medical Journal of South Africa, Johannesburg

March 1921 **16** No 8

Epidemic Encephalitis H T H Butt—p 146
Etiology of Scurvy A J Orenstein—p 151

Annales de Medecine, Paris

1921 **9** No 5

Pathologic Anatomy of Familial Hypertrophic Neuritis A Souques and J Bertrand—p 305
*Hippuric Acid Test of Kidney Functioning P L Violle—p 330
*Phonendoscopy of the Lungs E May and J Rouquet—p 345
*Pathologic Physiology of Fever E Rist—p 352
The Pancreas in Hodgkin's Disease H Sloboziano—p 362
The Pancreas in Elderly Diabetics Idem—p 366
*Bile Pigments in Intestines M Brule and P Spilmaert—p 377

Hippuric-Acid Test of Kidney Functioning—Violle's further experience has confirmed the reliability of the "hippuric synthesis test" which he described last year, as summarized here, Aug 7, 1920, p 435 After the elimination of hippuric acid has been determined on a definite diet, then the patient is given two doses of 0 5 gm each of benzoic acid and of glycocoll The normal subject on the average diet eliminates about 0 4 gm of hippuric acid The day of this test he eliminates 1 1 gm Substracting the normal 0 4 gm, this leaves 0 7 gm as the experimental hippuric acid The hippuric acid formed in response to the ingestion of benzoic acid represents a defensive reaction, and this suggests the participation of the liver He gives here the findings in a few typical cases out of a large number of subjects with liver or kidney disease or both The findings were always corroborated by the response to the methylene blue test and other measures for estimating the functional capacity of the kidneys Uremia and albuminuria seem to occur in waves or single attacks while changes in the formation of hippuric acid seem to be the reflection of more stable functional disturbances Insufficiency of the liver does not modify the response to the hippuric synthesis test, and consequently this seems to belong exclusively to the kidneys

Phonendoscopy of the Lungs—May and Rouquet explain how enlargement of the phonendoscopic area corresponds to the extent of the sclerosis of the lung in connection with emphysema When it covers nearly the whole of one or both lungs there is always chronic bronchitis and changes in the lungs which sometimes are more pronounced than would be suspected from other findings

Pathologic Physiology of Fever—Rist reports a case of paroxysmal tachycardia in the course of paratyphoid fever in a man of 30 He had long been subject to paroxysmal tachycardia and had four long attacks during this fever Each time, the fever dropped suddenly from 105 F to normal or a little below, and kept at this low figure as long as the paroxysm of tachycardia lasted, while the pulse reached 200 Analysis of this case confirms the assumption that the fever is the result of exaggerated oxidations The blood pressure dropped with the tachycardia Thus from purely mechanical causes the blood accumulated in the splanchnic vessels, and the amount reaching the heart was correspondingly less As less blood was thus pumped to the lungs the amount of oxygen taken up was reduced in proportion Hence there was not enough oxygen taken up to provide for the supplementary oxidations responsible for the fever But the primary stimulus—whatever it may be—still persisted and as soon as the mechanical obstacle to the circulation was arrested by the heart's returning to its normal rhythm the temperature began *to climb again at once* The drop in the temperature was so sudden with the abrupt onset of the tachycardia that perforation of a viscus was assumed at first The man recovered without sequelae

Passage of Bile Pigments Into Intestine with Normal Course Arrested—Brule and Spillmaert confirmed in their experiments on dogs that urobilin may be found in the intestine when the common bile duct is completely obstructed, and that stercobilin reappears in the stools when there is retention of bile pigments in the organism The latter reach the intestine by way of the blood In twenty cases of jaundice, stercobilin was found in the clay-colored stools in over 50 per cent In 62 per cent of these with complete retention of bile urobilin was found in the stools, as also when only bilirubin could be found in the urine In 18 per cent there was no urobilin in urine or stools but in 33 per cent it was found exclusively in one and not in the other Stercobilin in the stools is thus no criterion as to the permeability of the bile passages and urobilinuria is no evidence that they are not completely obstructed Although no bile was reaching the *duodenum directly* urobilinuria was pronounced in 65 per cent of their total cases This demolishes, they say the "enterohepatic" theory of urobilinuria

Archives des Maladies du Cœur, etc, Paris

May 1921 **14** No 5

Explanation of Delirium Cordis S de Boer—p 193
*Masked Dissociation of Auricle and Ventricle Beat R Lutembacher—p 202
Total Stenosis of Thoracic Aorta Follet and F Caille—p 207
*Patent Arterial Duct L Bard—p 212

Delirium Cordis—De Boer presents evidence that the impulse to the heart beat may pass through the heart muscle in two three or more stages of fractioned systoles The results of Mines' and of Garrey's research confirm this explanation of delirium cordis and of accumulated extra systoles

Masked Dissociation of Auricle-Ventricle Beat—Lutembacher shows how there may be a bigeminus or trigeminus beat of the ventricle with dissociation of the auricle and ventricle contractions

Total Stenosis of Thoracic Aorta—The youth of 17 presented hypertension in the arms with very low pressure in the legs the left ventricle was much enlarged and considerable collateral circulation had developed There was also an inconstant murmur at the mouth of the aorta He succumbed to meningeal hemorrhage The stenosis was so complete that even a pin could not be passed through it but probably the stenosis had not always been so extreme

Clinical Picture with Patent Arterial Duct—Bard shows how the clinical picture varies widely according as the blood flows from the aorta into the pulmonary artery or vice versa with persisting ductus arteriosus Four different sets of symptoms are possible and the clinician should specify in each case the direction of the blood stream and whether the blood is arterial or venous

Bulletin Medical, Paris

June 18 1921 **35**, No 25

Chronic Intestinal Stasis V Pauchet—p 509
Typhoid Spine M Bureau and O Marchand—p 511

Typhoid Spine—The woman of 47 had pain in the spine early in her typhoid fever but suppuration did not develop until seventeen months later and it returned six times in the course of two years until arrested by an autogenous vaccine Typhoid bacilli were cultivated from the pus each time

June 25 1921 **35**, No 26

Tardy Manifestations of Syphilis C Abadie—p 527
Classification of Arsphenamin Accidents Emery and Morin—p 528
So Called Traumatic Syphilis. C Simon—p 530
Treatment of Inherited Syphilis P Fernet—p 533
Wassermann Reaction in Blood and Urine C Simon—p 536

Tardy Manifestations of Syphilis—Abadie remarks that enough years have elapsed since arsphenamin was introduced

for us to estimate now its efficacy in warding off the tardy manifestations of syphilis If this medication is truly effectual, we ought to see fewer children born with inherited syphilis, and fewer cases of neurosyphilis But nothing seems to show that the proportion of syphilitic infants is growing less, and in his ophthalmologic service the number of cases with syphilitic disease of the fundus of the eye is larger than ever The cases of general paresis crowd the hospitals for the insane, with no reduction in their numbers In treatment of tardy manifestations in the retina and optic nerve, he is loyal to intravenous injections of mercuric cyanide in 0 01 gm doses every second day This drug can be kept up for years without harm, he says, and he has found it more effectual alone than when combined with arsenicals

Traumatic Syphilis—Simon adds to Pasini's recently published five cases, two from his own practice in which a traumatic injury of a region containing latent spirochetes roused them to virulence A syphilitic lesion developed at the spot although the subject had been supposed to have been long cured of his syphilis

Treatment of Inherited Syphilis—Fernet seeks to emphasize the chronic nature of inherited syphilis, and the advantage to be derived from associating the proper organotherapy with specific treatment

Bulletins de la Société Medicale des Hôpitaux, Paris

June 3 1921 **45**, No 19

Mitral Stenosis in Relation to Syphilis P Merklen—p 815
Subcutaneous Arsphenamin in Neurosyphilis Tixier and Duval—p 818
*Changes in Circulation Below Constricting Band d Oelsnitz—p 824
*Symptoms from Compression of Sinus Cavernosus E Ledoux—p 827
Autovaccine Treatment of Colon Bacillus Septicemia F Tremolieres and Lassance—p 830
Diagnosis of Cancer of Ampulla of Vater Carnot and Libert—p 836
Examination of Right Ventricle C Laubry and L Mallet—p 840
Anaerobic Pleurisy in Typhoid A Compagnon—p 843
Peripheral Venous Tension M Villaret et al—p 848

Changes in Circulation Below Constricting Band—D'Oelsnitz here describes the response in normal subjects, the enlargement of the veins after removal of the Esmarch bandage after five minutes of compression In cases of sympathetic inhibition, this enlargement of the veins is very slight, while it is exaggerated with abnormally excitable sympathetic system

Symptoms from Pressure on the Sinus Cavernosus—In the case described by Ledoux, pain in the left orbit and temple developed suddenly and the eyeball protruded and the neck began to enlarge In about six weeks diabetes insipidus developed, and gradually the nervous symptoms of hyperthyroidism became installed The retrospective diagnosis was some lesion in the posterior lobe of the pituitary This had compressed the sinus cavernosus and the nerves in that region Under pituitary treatment (posterior lobe) the symptoms all gradually retrogressed and the man now seems to be entirely cured, seven years since the first symptoms

Journal de Chirurgie, Paris

June 1921, **17**, No 6

*Hydatid Cysts of the Lung D Prat (Montevideo)—p 529
*Circular Constriction with Fracture of the Femur P Hallopeau—p 551

Hydatid Cyst of the Lung—Prat has operated in twenty-nine cases of hydatid cyst of one or both lungs, with recovery of all but two, and the deaths in these cases were from other causes He operates as a rule at two sittings, the first intervention being restricted to means to induce adhesion, unless the cyst presents and can be evacuated at once He gives an illustrated description of the technic The patient sits astraddle of the operating table, leaning his head against the turned up end, in the "jockey position," his feet in stirrups Under local anesthesia, Prat resects 6 or 8 cm of the rib over the cyst located with the roentgen rays The parietal pleura is incised and the lung explored with the finger, and then a wick of gauze is introduced into the opening to induce adhesion, the wound is tamponed and left gaping and unmolested for twelve or thirteen days Then the edges of the wound are drawn back, the cyst is punctured, its contents aspirated, and the cyst membrane removed There never has been inoculation from the cyst in his experience, although the only disinfection is with iodin He leaves a drain in the wound, and healing was complete in from twenty days to one or two months or, exceptionally, three months He calls this technic the Lamas-Mondino method It was designed at first for cases in which it proved impossible to harpoon the lung at first as intended, and its advantages soon led to its adoption as the routine procedure, under roentgen control The case reports are given in detail

Circular Constriction for Fractured Femur—Hallopeau gives the technic for belting the stumps together to insure faultless healing, and illustrates some devices with which he improves on Parham's metal bands One is a narrow metal plate to place over the fracture, with grooves in which fit the Parham strips to keep them from slipping A sharp pointed spur at each corner grips the bone and prevents any slipping of the plate Or it can be made with grooves for the Parham bands at one end and holes for screws in the other half

Journal de Médecine de Bordeaux

June 10 1921 **92**, No 11

*Reconstruction of Fractured Long Bones Charbonnel—p 305
*Lesions of Bony Wall of Thorax Creyx—p 311
A Trip Through Indo China Cheyrou—p 313

Reconstruction of Fractured Long Bone—Charbonnel declares that the use of bone plates and other bone supports represents progress beyond what is attainable with non-absorbable aids in osteosynthesis The dead bone is finally absorbed and its elements utilized in the new growth of bone. But to date circular constriction with metal bands or fixation with plates and screws has yielded the best results His illustrations show the technic and the indications for the various procedures He warns that the anatomic reconstruction of the bone does not hasten repair so that the limb can be used sooner for weight bearing With a fractured femur he keeps the patient in bed for six weeks after the splint has been removed the fifteenth day Fracture below the knee does not require more than six weeks in bed in all The limb must be systematically exercised and massaged while the patient is in bed When he is allowed to get up the recovery of function will be so rapid that the time lost in bed will be soon made up If a foreign substance is left permanently in the tissues, it can be disregarded as, even if it would have to be removed later, this will require only an insignificant intervention under local anesthesia

Ossification of Costal Cartilages—Creyx found no trace of ankylosis in the articulation at either end of the ribs in 100 cadavers, including five with chronic rheumatism with ankylosis of certain other joints, forty-five with pulmonary emphysema and thirty with pronounced arteriosclerosis The costal cartilages were frequently ossified but the play of the rib joints was never impaired In all but one of the forty-five emphysema cases the costal cartilages were more or less completely ossified, and he thinks that this precedes and entails the emphysema

Journal d'Urologie, Paris

April 1921 **11**, No 4

*Impalement Injuries of Perineum J Ferron—p 265
*Chronic Gonorrhea of Posterior Urethra E L Gautier—p 289
Supernumerary Blind Ureter P Guibal—p 307

Impalement Injuries of Perineum.—In Ferron's seven cases the injury was from the horn of a bull, a branch of a falling tree, a pitchfork or oil can, or a blow from an umbrella tip in play The two patients with injury of the urethra alone were both saved, but only one of the five with lesions of the bowel They reached the hospital too late for effectual treatment One of them might have been saved if he had been rushed to the hospital in an auto, Ferron did not dare to operate with merely kerosene lamp illumination All such impalement injuries of the perineum are accompanied with profuse hemorrhage The urine did not seep through the wound in the perineum until the third day in one case with two wounds in the bladder An incision in the bladder only large enough to introduce a catheter to divert the urine should be supplemented by a retention catheter in the urethra to keep the shape of the latter This catheter is kept plugged and

the space between it and the urethra wall is rinsed out with an antiseptic solution once or twice a day The seven cases are described in detail With wounds of the posterior perineum the intestines scarcely ever escape, and the rectal drip should not be attempted

Chronic Posterior Urethritis—Gautier discusses the symptoms diagnosis and treatment, with accounts of ten cases In all the ordinary methods of treatment had been applied without relief It requires topical application under endoscopy, silver nitrate iodin, the actual cautery or high frequency current The mucosa returns to normal under the latter without danger of hardening of the tissues He uses for the purpose a No 16 diathermy sound in an insulating shell applying it one week to the anterior wall the next week to the posterior, and so on The tip of the sound must just escape contact with the tissues and the current is turned on for only a few seconds, and the results then inspected Actual contact chars the tissues and exposes to danger of stenosis later

Medecine, Paris

June 1921 **2**, No 9

Recent Progress in Electroradiology A Zimmern—p 661
*Physical Training Gaston Vidal—p 671
*Radium Treatment of Roentgen Dermatitis J Bergonie—p 675
Measurement of Doses in Deep Radiotherapy M Lambert—p 678
*High Frequency Current in Surgery Heitz Boyer—p 683
The Electric Enema Laquerriere and Delherm—p 690
*Radium Treatment of Nevi Simone Laborde—p 696
*Phototherapy Experimental and Clinical Aspects Vignard—p 701
The Occupational Output of the Severely Crippled Gourdon—p 707
Comparison of Spas of France and Germany M Piery—p 711
Indications for Artificial Heliotherapy H Dausset—p 718
Radium Treatment of Uterine Cancer Regaud et al—p 725

Physical Training—The medical faculty of the University of Paris organized last year a course of training in physical education, and this year the French legislature passed a law making physical training and military preparation compulsory M Gaston Vidal, the undersecretary of state for technical training, is in charge of the work and is called the 'sports minister" He has appointed a committee of scientific and sport authorities to study questions relative to general physical training and professional preadaptation and correction of occupational deformations In this article he gives his views on the subject and emphasizes in conclusion that physical training should not be limited to the young, its benefits should be extended to the adult worker whatever his field of work intellectual or manual

Curietherapy of Roentgen-Ray Dermatitis — Bergonie relates that he has recently examined three roentgenologists who have had professional radiodermatitis benefited by application of radium One of these physicians has had one finger amputated and amputation of another finger of the right hand was being considered Another has already had four operations on the hands, the general condition was bad and the pains at times unbearable Under exposures to radium, one of the physicians seems completely cured, all symptoms having subsided The contemplated operation on the second has been abandoned, there is no more pain, and the stiff joints have become supple The condition has been notably improved in the third, there is now scarcely any pain The curietherapy has thus proved its efficacy for these roentgen lesions except the deep eschars involving the bone, with inadequate circulation and loss of muscle tissue It seems to aggravate this class of lesions as in the third case mentioned Most of this physician's lesions improved, but the deep eschars seemed to be whipped up to a more rapid course

The High Frequency Current in Surgery—Heitz-Boyer explains the special features which distinguish the high frequency current from other means to destroy tissues, its potency the certainty of its action the ease and convenience with which it can be manipulated, and the absence of any painful reaction In addition to its numerous indications in disease of the bladder, urethra, ureter and prostate, he lists indications in general surgery polyps and strictures in the rectum nose and throat, condylomas, lupus warts etc He found it particularly useful in treatment of hemorrhoids in fourteen cases, harmless, effectual and indolent The absence of any painful reaction is particularly an advantage in this class of cases

Radium Treatment of Vascular Nevi—Laborde has found protruding nevi, angiomas, more susceptible to the action of curietherapy than flat nevi The angioma type is more frequent in young children, and it should be treated early for various reasons, especially because in later life it may undergo fibrous transformation which renders it more refractory to the rays These angiomas frequently develop during the first weeks of life but no one heeds the small red point until it spreads considerably It could be completely aborted while still a mere dot, with a single electrolysis puncture Under radium these small tumors sink down turn brown, and then vanish without leaving a trace Flat nevi are refractory to all physical agents, but radium may attenuate considerably the red color Extreme caution is indispensable as inflammation and teleangiectasis may develop at the time or even months later from the action of the radium It is wiser not to attempt to decolor the patch completely, but stop the exposures when the red has been reduced to pink She gives two sittings in two weeks, then waits two months and gives one sitting then continues with a sitting once in three months Small angiomas are given four or five thirty-minute sittings at six day intervals

Phototherapy—Vignard concludes his description of what can be expected from luminotherapy by saying that thermotherapy is the enemy of luminotherapy as humidity and perspiration detract from the action of the light on the skin

Paris Medical

Jan 1 1921 **11**, No 1

Tuberculosis in 1921 Lereboullet and L Petit—p 1
Scrofula The Old and the New Conception A B Marfan—p 13
Asthma and Tuberculosis F Bezançon and S I De Jong—p 20
Value of Artificial Pneumothorax L Renon—p 24
Prophylaxis of Tuberculosis in Infants Bernard and Debre—p 27

The Modern Conception of Scrofula—Marfan comments on the comparatively recently acquired knowledge that immunity for acute diseases is something entirely different from immunity to chronic diseases The first is the consequence of complete recovery, the other is a function of infection With tuberculosis and syphilis, complete recovery causes the loss of immunity The tuberculous lesions which used to be labeled scrofula are distinguished by their relative benignity and their power of conferring a certain degree of resistance against tuberculosis The skin tuberculin reaction is always very pronounced, as also with impetigo ecthyma phlyctenular keratitis and ulcerative rhinitis, although the connection between these affections and tuberculosis has not been demonstrated otherwise It is possible that an ordinary pyodermatitis assumes a special form in the tuberculous He insists that the term scrofula should be retained as facts are facts and scrofula represents a morbid condition observed only in the tuberculous The superficial lesions require special care in treatment to ward off and cure secondary infection

Presse Medicale, Paris

June 18 1921 **29** No 49

Statistic Nosology E Rist—p 481
*Access to the Heart H Costantini—p 483
*Serodiagnosis of Tuberculosis in Children J Sevi—p 484
*Bilateral Ligation of Carotid Arteries C Lenormant—p 485

June 22 1921 **29** No 50

Cardiac Organotherapy A Martinet—p 493
Roentgenography of Tuberculous Lung Pissavy and Saidman—p 494

An Experience in Statistic Nosology—This is the second part of Rist's recent study of the men exempted from military service in the nineteen years before the war The first part was reviewed July 2 p 72

Access to the Heart—Costantini's incision skirts the costal arch from the eighth rib to the xiphoid process, then runs vertical a little to the right of the median line to the second interspace and then horizontal to a point nearly perpendicular to the starting point The sternum is divided to correspond a little to the right of the median line The flap thus formed can be raised to allow ample access to the heart without injury of ribs or pleura The cartilage in the second space is cut along with the sternum but the soft parts are left intact and the intact left pleura is drawn out of the way with the flap of chest wall

Serodiagnosis of Tuberculosis in Children—Sevi obtained a positive deviation of complement in four of fifty-four supposedly healthy children in an institution Further tests confirmed the presence of hitherto unsuspected active tuberculosis in these four

Ligation of Carotid Arteries—Lenormant reviews 19 recent cases he has found on record in which the carotid artery was ligated on both sides in treatment of pulsating exophthalmos With the older cases this brings the total to 41 Only 5 of the 7 deaths could be traced to cerebral disturbance, but hemiplegia or other cerebral symptoms, slight or severe, developed in 24 per cent This proportion is scarcely larger than after unilateral ligation Fully 61 per cent of the total recovered completely without by-effects of any kind But for this it is indispensable that a sufficient interval should be left between the ligation on the two sides for the brain to become accustomed to the change in its circulation and for collateral circulation to develop The data presented justify bilateral ligation when absolutely necessary

Progres Médical, Paris

June 11 1921, **36**, No 24

Isolated Rupture of Fetal Membranes H Vermelin—p 277
Tincture of Garlic in Treatment of Pulmonary Gangrene Loeper, Forestier and Hurrier—p 279
*Tuberculous Meningitis in Adults L Ramond—p 280

Tuberculous Meningitis in Adults—Ramond comments on the completely different symptoms and course with tuberculous meningitis in children and in adults, saying that the fatal outcome is about the only feature common to both He describes a typical case in a young man sent to the hospital with the diagnosis of typhoid A week before, paresis of the right hand and aphasia—the whole lasting less than ten minutes and without any other symptom for a week calling attention to the nervous system—gave the clue to the rest of the clinical picture He teaches that any cerebral symptoms coming on suddenly in an adult suggest the possibility of tuberculous meningitis, even in the absence of any symptoms of tuberculosis This young man's symptoms indicated the mild flaring up of a latent pulmonary tuberculous process, and this had been mistaken for typhoid Lumbar puncture revealed signs of irritation of the meninges, and a few days brought the full picture of meningitis, with death in high fever the fifteenth day from the first nervous symptoms Tuberculous meningitis in adults is usually monosymptomatic, as in this case for a time In children, the meninges dominate the clinical picture, in adults, the brain, and the brain manifestations may be psychic, motor or sensory, and in the form of exaggeration or inhibition Acute mania, melancholia, or coma may usher in the disease Tuberculous meningitis should be suspected whenever the tuberculous complain of intense headache It should be suspected also when delirium accompanies albuminuria in the tuberculous, as uremia is rare in tuberculous nephritis Tuberculous processes elsewhere may show marked improvement as the meningitis develops

Revue Franç de Gynecologie et d'Obstet, Paris

Feb 1 1921 **15** No 12

*Uterine Fibromas and Retroflexion P Dalche—p 469
Postpartum Inversion of Uterus Le Louet—p 481

The Evils of Uterine Fibromas—Dalche comments on the difficulty of differentiating between a uterine fibroma and chronic congestion in the body of the retroflexed uterus with hysteralgia With congestion there is usually a tendency to varices, hemorrhoids and ptosis He combats it with half-hour hot sitz baths, with hot enemas At night the woman takes a hot enema of 250 c c which is retained, lying prone on the bed The heat and the weight of the water pressing on the uterus reduce the congestion and push it forward Weeks may pass before the desired result is attained Light massage aids as also a chain of tampons impregnated with glycerin, pushed into the posterior vagina The glycerin attracts the fluid out of the tissues, this should be repeated at least once a week Ergot also aids by squeezing out the fluid from the uterus, and vasoconstricting drugs are useful Constipation should not be allowed The retroflexion once reduced, a pessary may render good service In six months or a year the uterus will be found in normal position Anteflexion is liable to be mistaken for a fibroma

The glycosuria induced by fibromas may progress to actual diabetes, as in a case he describes in which the fibroma had developed rapidly during a pregnancy He is inclined to ascribe this fibroma glycosuria to mechanical injury of the suprarenals Hemorrhage in these cases is often kept under control by treatment as for diabetes plus organotherapy The hemorrhages in the fibromatous uterus may exsanguinate the optic nerve, and total blindness result He has had a case of sudden blindness from the bleeding of a duodenal ulcer, and warns to call in an ophthalmologist at once when visual disturbances follow severe hemorrhage Nothing should be done that will add to the losses of blood He has also seen cases of hemiplegia and other cerebral phenomena in the course of fibromas When a fibroma becomes infected the periodical release of toxins may induce recurring fever, deceptively simulating malaria

Revue de Medecine, Paris

March 1921 **38**, No 3

*Sodium Salicylate G Caussade and P Charpy—p 127
The Duodenal Fluid H Mauban—p 146

Sodium Salicylate—Caussade and Charpy remark that the symptoms sometimes observed during salicylic medication are generally traceable to impurities in the original salicylic acid Only ten cases are on record of fatal intoxication from the salicylates, and Pouchet has said of these that other causes can probably be incriminated in all but two The gravest accident from their use is *salicylic delirium*, there may be actual mania for a time, but it soon subsides and the drug can be continued in small doses The fatal dose is from 12 to 30 gm but 30 gm have been taken without fatal outcome In acute articular rheumatism with involvement of the heart, tendency to pulmonary edema, tachycardia, intense and very painful polyarthritis, or the heart derangement may predominate, with blood in the pericarditic effusion—in these grave cases, large doses of the salicylates are necessary to arrest the disease before irreparable damage is wrought They reco [illegible] in such cases to give 1 or 2 gm of sodium salicylate [illegible] the tolerance and follow with more to a total of 10 [illegible] gm given in the course of from four to six hou [illegible] This treatment is for men only, won [illegible] children under 7 and men [illegible] chronic rheumatism with dama [illegible] objects with [illegible] forty-five with pulmonary intoxication [illegible] arteriosclerosis The chronic rhe [illegible] but the play of the matism [illegible] one of the forty- [illegible] more or less

Schweizer [illegible]

[illegible] No 22

*Acute Cholecyst [illegible] cher—p 505 Concn in No 23
*Hemolytic Jaundice Aggravated by Altitude Frenkel Tissot—p 509
Cesarean Section on Lower Segment of Uterus A Oettker—p 513
Sedatives for Painless Delivery E Jaeggy—p 515

Acute Cholecystitis—Vischer reviews the operative cases at the Basel surgical clinic from 1905 to 1917, a total of 119 cases with t [illegible] tions on two of the patients

Hemolytic [illegible] ice Aggravated by Altitude—The young man, now 18, belongs to the family on which Minkowski based the first published description of hemolytic jaundice The resisting power of the red corpuscles shows a pronounced drop when the young man spends a month or two at St Moritz in the mountains, while the enlargement of the spleen and the subjaundice show no change This case has been under close medical supervision for a number of years, and the tabulated findings suggest a theoretical explanation for the changes observed

June 16, 1921 **51**, No 24

Prophylaxis of Postoperative Pneumonia E Specker—p 549
*Explanation of Sudden Thymic Death H Ryser—p 554
*The Persisting Thymus S Yamanoi—p 557
Epigastric Hernia H Kohl—p 560
Febrile Herpes R Doerr and A Schnabel—p 562

Sudden Death in Status Thymolymphaticus—Ryser analyzes the four explanations that have been advanced to throw light on "thymus death" pressure from the enlarged thymus, chemical autointoxication, lack of epinephrin or excess of thymus secretion, and lastly, lymphocyte infiltration of the myocardium which Celeen found pronounced in six cadavers after sudden death in the status thymolymphaticus. Ryser ascribes importance to the constant hypoplasia of the chromaffine system in these cases plus the excessive thymus functioning, but regards the infiltrations in the heart as the principal factor. In some of Riesenfeld's and Celeen's cases the muscle fibers in the heart had almost completely atrophied with fatty degeneration. In Riesenfeld's cases the children with idiopathic hypertrophy of the heart died suddenly as they came to an age of greater physical exertion. He adds that sudden death, as with this thymic death is being observed nowadays in persons who had apparently recovered from influenza or other infectious disease the underlying degeneration of the heart entailing fatal arrest of the heart the same as in these cases of constitutional inferiority of the heart and vascular system in the status thymolymphaticus.

The Persisting Thymus—Yamanoi investigated the thymus in 303 persons over 25 who had succumbed to acute influenza and in sixty older cadavers. In 26.34 per cent of 187 men there was more or less persistence of the thymus and in 20.68 per cent of 116 women. The microscopic and other findings are analyzed. This total of 25.89 per cent with a persisting thymus in persons between 25 and 50 shows he says, that the persistence of the thymus is within the physiologic range and we must cease regarding macroscopic thymus tissue after 25 as a pathologic phenomenon.

Archivio Italiano di Chirurgia, Bologna

May 31 1921 3 No 4

Grave Tetanus After Injection of Antiserum V Craghetto—p 318
*Evolution of Connective Tissue Implants B Polettini—p 327
*The Ureter in Renal Tuberculosis G D'Agata—p 367
*Substitution of Fibula for Tibia P Fiori—p 380
Testicle and Uterus in Hernial Sac of Apparently Normal Man G Bolognesi—p 393

Connective Tissue Implants—Polettini experimented with implants of tendons, arteries, cartilage and the cornea devitalized and kept in alcohol for a time. The implants proved very useful to repair losses of substance. Nothing was seen that indicates the revitalization of the implanted tissue.

The Ureter with Renal [illegible] gives photomicrographs [illegible] the tuberculous [illegible] of thirty who have had professional radiation of radium. One of [illegible] the stump finger amputated and amp[illegible] and buried right hand was being [illegible] during the four operations on [illegible] the upper and the pains at [illegible] disease in [illegible] have been no disturbances since [illegible] lesions in the prostate and one testicle subsided spontaneously thereafter and the man is still in good health fifteen years later. In 23.33 per cent of the cases the kidney showed large and numerous cheesy foci and the ureter extensive destructive foci. In two in this group a fistula developed in the lumbar region and in another case there was reflux of urine from the ureter stump. The upper segment of the ureter [illegible] resected in these cases and in one of the three in which [illegible] complications developed, calcareous deposits were evident. These may have interfered with the anticipated shriveling of the ureter after the nephrectomy. These experiences reiterate the importance of an early operation for renal tuberculosis and show that the ureter can safely be left to itself in all but the most advanced cases, merely dividing it between clamps with the actual cautery, ligating with catgut.

Substitution of Fibula for Tibia—Fiori's roentgenograms eleven years after the operation show that the shaft of the fibula has grown, the circumference of the leg is now only 2 cm. less than that of the sound side, and it is only 1.3 cm. shorter. The diaphysis of the tibia had been destroyed by five years of osteomyelitis. The technic for the bipolar implantation is described. The patient was a boy of 14 and now eleven years later, weighs 69 kg. and in his work as an expressman carries loads to 100 kg.

Pediatria, Naples

May 15 1921 29, No 10

Treatment of Infantile Paralysis H Bordier—p 433
Rachitis in Syphilitic Infant L M Spolverini—p 440
Means to Prevent Coughing Up of Tube C D'Anna—p 447
Retention of Urine in the Prematurely Born Laureati—p 457
Vaccine Therapy in Typhoid in Children G Caronia—p 460
Immunization Against Diphtheria R Vaglio—p 463

Treatment of Infantile Paralysis—Bordier emphasizes the necessity for prompt measures before conditions become irreparable in spinal paralysis, anterior poliomyelitis, etc. Much can be accomplished with diathermy, radiotherapy and galvanic electricity, the latter applied rhythmically and inversely to the muscles showing the complete or partial reaction of degeneration. The diathermy must be resumed during the course of treatment if the temperature of the part drops again below normal. The electric treatment must be kept up for months or even for years to obtain the full effect it is capable of rendering. He agrees with Bergonie that even the gravest prognosis may be completely transformed by intensive, well regulated, harmless and persevering electric treatment.

To Fasten the Intubation Tube—D'Anna relates that further experience has confirmed the harmlessness and the reliability of Polverini's method of fastening the tube in the throat so that the child is free to be out of doors etc. without danger of its coughing up the tube. He describes the five most recent cases in which this was done. An ordinary suture needle threaded with 2 m. of strong silk is introduced on the median line at the junction of the middle and lower thirds of the thyroid membrane, and is brought up and out through the mouth. The upper ends of the thread after cutting off the needle, are tied around the O'Dwyer tube which is then introduced as usual. The lower ends of the silk thread projecting from the neck, are tied over a roll of gauze and thus fasten the tube permanently in place. The lower ends of the thread are coiled on the neck and protected with a dressing, the upper ends are tied around the ear. The disadvantages of such a thread are amply compensated by the freedom it gives the child, and the relief in private practice from dread of the tube's being coughed up. Sixteen years experience with this method have placed it on a solid footing. The tube can be taken out to be cleansed at need. He says that if there is already a tube in the throat this is not removed when the needle is introduced. The tip is guided by the finger in the throat until it can be seized with forceps.

Policlinico, Rome

June 6 1921 28 No 23

Estimation of Disability for Workmen's Compensation S Diez—p 779
Benefit from Fixation Abscess in Typhoid P Cataldi—p 787
Ether in Treatment of Whooping Cough A D'Aroma—p 788
Chronic Peritonitis I Gilberti—p 789

Chronic Peritonitis—Gilberti analyzes the clinical pictures with chronic peritonitis, especially tuberculous peritonitis, to determine whether and when operative measures are indispensable. A laparotomy is still the best weapon at our disposal to attack chronic tuberculous peritonitis. Mild cases may subside under expectant treatment alone and surgical intervention is contraindicated in the acute form as it may depress the general condition too much. Gatti and Gelpke insist that the tubercles must be given time to complete their histologic development before the laparotomy can have a curative action. When the tubercles show vacuolization from a dropsical tendency, the laparotomy is most likely to prove effectual. In the very far advanced cases it is liable to fail. The best outlook for it is when the ascites is free, abundant and serous, the general condition growing gradually worse. His experience with four cases given roentgen-ray treatment was discouraging but heliotherapy in his eighteen cases often displayed striking efficacy. The respiration and circulation soon show the tonic effect and the general condition has improved miraculously in some cases that were considered beyond operative relief.

Riforma Medica, Naples

June 4, 1921, 37, No. 23

Arteriosclerosis of Humeral Artery L. Torraca—p. 530
*Protein Intoxication F. Pentimalli—p. 532
Bradycardia from Sino-Auricular Heart Block S. Fichera—p. 533
The Leg Phenomenon with Pyramidal Disease C. Angela—p. 537
Cancer After Industrial Trauma E. Arevoli—p. 541
Disease of the Diaphragm Zone I. Jacono—p. 542

Protein Intoxication—In this preliminary communication Pentimalli remarks that the research on this subject has been restricted to acute protein intoxication, that is anaphylaxis. He has been conducting research on the conditions that develop with chronic protein intoxication from prolonged, systematic parenteral administration of proteins.

Barré's Leg Sign of Pyramidal Disease—Barre called attention to this leg phenomenon as a sign of disease of the pyramidal tracts, but Angela relates extensive experience with it which disproves this exclusive character for it. Under certain given conditions the sign is pronounced with peripheral as well as with central paralysis.

Tumori, Rome

April 28, 1921, 8, No. 1

*Primary Sarcomas in Scar Tissue F. Nassetti—p. 1
Sarcoma in Nasal Fossa G. Bilancioni—p. 22
Fibroma of External Ear F. Putelli—p. 42
*Cutaneous Manifestations of Leukemia L. Martinotti—p. 63 Cont'd

Sarcoma in Scar Tissue—Nassetti comments on the rarity of sarcoma developing in scar tissue in comparison to the relative frequency of endothelioma in a cicatrix. A single trauma is more frequently found in the anamnesis of sarcoma, and continued irritation in cases of carcinoma. In a case described, the sarcoma had developed in the cicatricial tissue left after two months of suppuration in the trapezius muscle after a shell wound. In some of the cases he cites from the literature there had been chronic suppuration from a projectile in soft parts or bones, or acute or tuberculous osteomyelitis. The cases had not been followed long enough in most of them to speak of a permanent cure after excision of the growth and its bed of cicatricial tissue and adjoining glands. In several cases the patients soon succumbed to metastasis.

Sarcoma in Nasal Fossa—The melanotic sarcoma had developed after a gunshot wound of the cheek and orbit in a woman of 53. Bilancioni reviews the history of sarcoma of the nose from Palletta's first case in 1820 to date. In his case the small sarcoma protruded from the nostril and it was successfully removed in February, 1920. Several colored plates show the microscopic findings.

Skin Manifestations in Leukemia—Martinotti applies the term hemoblastosis to leukemic, aleukemic and leukemoid affections and in this instalment of his monograph on the cutaneous manifestations in these conditions he discusses the chronic hyperplastic processes, lymphoid and myeloid, chloroma, etc.

Brazil-Medico, Rio de Janeiro

April 30, 1921, 35, No. 18

Three New Trematodes Lauro Travassos—p. 221
The Social Evils A. Ricardo—p. 223

May 14, 1921, 35, No. 20

Mitral Stenosis O. Clark—p. 245

Mitral Stenosis—Clark reiterates that syphilis is predominantly responsible for aortic insufficiency, and febrile rheumatism for mitral stenosis. Acute articular rheumatism, he says, is rare in Brazil. He found only 3 per thousand cases among 3,000 schoolchildren examined. Even with pronounced mitral stenosis, if repose can be enforced long survival is possible, as in cases of mitral stenosis of a degree apparently incompatible with life, if complicating paralysis fastens the patient to his bed; he may live twenty or thirty years longer. Auricular fibrillation in itself does not aggravate the condition in mitral stenosis but bacterial invasion is particularly dangerous. The result often is a septic ulcerating or malignant endocarditis. In one such case the endocarditis induced in the young man hemoptysis, embolism in the popliteal artery and retina with panophthalmia and death in less than a month. Clark refers in conclusion to slow endocarditis as one of the most treacherous of all diseases. The subject is usually young and apparently in the best of health at first, the few symptoms are ascribed to some transient infection until embolism clears up the diagnosis. Eradication of every septic focus in the body is the only means to ward off these complications. Mitral stenosis is the valvular disease most frequently complicated with auricular fibrillation. He has confirmed that the latter frequently yields to large doses of digitalis according to Eggleston's method. But the digitalis has to be kept up permanently to maintain the benefit. He describes several cases of mitral stenosis with different complications.

Semana Médica, Buenos Aires

May 12, 1921, 28, No. 19

*Syphilis of the Kidneys C. P. Waldorp and O. Behr—p. 557
*The Pituitary During Pregnancy M. L. Perez—p. 540
Suture of the Larynx R. Landivar and H. Boghano—p. 549
Malaria and Tuberculosis J. A. Lopez—p. 550
Topographic Anatomy of the Brain E. Amato—p. 555
Prostitution and Venereal Disease L. Sirlin—p. 556

Syphilitic Disease of the Kidneys—Waldorp and Behr have always found a history of syphilis when the polariscope revealed lipoids in the urine sediment. The syphilis may have been inherited or acquired but the lipoids testified to lipoid degeneration of the kidneys. In some cases the search for lipoids in the sediment first cleared up the diagnosis which had wavered between acute accidental nephritis and irritation of the kidneys from mercury. Lipoid necrosis may become installed after the kidneys have become degenerated from other cause, but syphilis is capable of engendering it alone.

The Pituitary During Pregnancy—Perez reviews the anatomy, physiology and modifications undergone by the pituitary during pregnancy, everything indicating, he says, an exaggerated functioning at this period with hypertrophy to correspond of the glandular portion of the hypophysis cerebri.

Suture of the Larynx—The man of 34 had tried to commit suicide by cutting his throat with a razor, the wound in the infrahyoid region extending from one sternocleidomastoid muscle to the other. Landivar arrested the hemorrhage by clamping the superior laryngeal artery and tamponing, to allow the man to be brought to the hospital. Then all the arterioles and veins in the region were ligated separately and the incision was sutured in four separate planes using fine silk for the three lower planes. Morphin was injected to reduce the man's agitation and the neck was bandaged with the head bent forward. There was complete aphonia at first and nothing was allowed by the mouth except scraps of ice. The fourth day iced milk was given. Each swallow induced a distressing cough but this gradually wore off by the eighth day and by the sixteenth day the man was dismissed completely recovered. The writers comment on the peculiar idea of the laity in regard to the death dealing properties of slashing the neck with a razor when in reality the tough cartilages and the inaccessibility of the vital arteries and spinal cord render this procedure comparatively harmless in comparison to the actually vulnerable points in the vicinity.

Malaria and Tuberculosis—Lopez relates that in his experience with three generations of army recruits he has frequently found that young men with a history of old malaria did not respond properly to quinin, and certain minor signs suggested superposed tuberculosis. Applying Viton's tuberculin therapy with the minutest doses supplemented with an antituberculosis vaccine, these men recovered throwing off both the symptoms suspicious of tuberculosis and the malaria as well.

Gann, Tokyo

June, 1921, 15, No. 2

Experimental Studies on Metastasis of Mouse Carcinoma S. Okonogi and K. Tadenuma—p. 7

Archiv fur Gynaekologie, Berlin

1921, 114, No. 2

*The Death Rate of Cancer Operations B. Schweitzer—p. 213
*Premature Separation of Normal Placenta O. Frankl and V. Hiess—p. 225
Pathology of the Kidney During Pregnancy R. T. von Jaschke—p. 255
*Gonads and Development of Sex J. Halban—p. 289

Malignant Suprarenal Tumor F C Orthmann—p 304
*Hydrosalpinx B H Jagerroos—p 328
Tuberculous Tubal Processes J Frisc—p 393
Simplified Twilight Sleep in Obstetrics Herm tein—p 401
Pemphigus Neonatorum Bierende—p 411
Unilateral Defects in Female Urogenital Tract F Schilling—p 428
Formation of Wolffian Body etc J Kermauner—p 438

Improved Technic for Uterine Cancer Operations—Schweitzer describes Zweifel's method of excluding the peritoneum completely This method has been in constant use for ten years and peritonitis developed in only 0 93 per cent of the 322 cases The primary mortality in the 281 cancers of the cervix was 5 34 per cent There was suppuration of the wound in only 2 5 per cent of the total cases Through a laparotomy incision the cancerous uterus is detached from its connections and three suture threads are passed through the apex of the bladder, and the long ends are tied temporarily to the top of the uterus The parametrium and glands are excised, and when the uterus is thus completely free on all sides it is pushed down deep into the pelvis and the peritoneum over the bladder and pouch of Douglas is drawn up and sutured together to form a solid and impervious roof over the whole This walls off the pelvic cavity completely and then the cancerous uterus is easily removed through the vagina The long threads that then hang from the top of the bladder are tied to the anterior lip of the gap left in the vaginal wall, to hold the bladder upright A strip of iodoform gauze is packed in the supravaginal wound cavity The gauze is removed the tenth day The figures cited above confirm the progress realized by this technic The vagina is not opened until the pelvis has been solidly roofed over and hence peritonitis and pyelonephritis do not get a chance to develop The sutures holding up the bladder facilitate spontaneous urination from the start and hold the bladder up out of the way otherwise it sags into the space left by the hysterectomy There was no trace of peritonitis in one series of 159 cases

Premature Separation of Normally Located Placenta—In the 34 cases of this kind in Frankl and Hiess' experience, 19 of the women had albuminuria including 6 with signs of severe pregnancy intoxication with a tendency to convulsions in 3 In the others pregnancy nephritis was evident in 11 In 2 in this group there was preexisting kidney disease In the 9 uteri examined postmortem the placenta and uterus showed nothing pathologic otherwise The negative results of their research suggest that purely mechanical factors are involved Anything inducing sudden overfilling of the spongiosa vessels is liable to pry off the placenta from the wall In their 16 mild cases there was no mortality among the mothers, and 13 children were born alive but all the children died in the 18 severe cases and 9 of the mothers With purely internal hemorrhage the diagnosis is not always easy Rupture of the uterus or of the twisted pedicle of a cyst may be suspected or a ruptured extra-uterine pregnancy The uterus is found contracted while it relaxes with rupture Expectant treatment is justified with slight hemorrhage from separation of the edges With severe internal bleeding none of the usual measures have a chance to be effectual and the uterus must be emptied at once In emergencies the inflatable bag can be used although this exposes to danger that it may increase the pressure in the uterus to actual rupture The bag must be weighted and the os may have to be additionally enlarged by discission to allow forceps or version craniotomy of the dead fetus forceps for the living or cesarean section By the vaginal route the latter is less of a strain for the organism but the danger of rupture and the difficulty of its recognition turn the scale in favor of abdominal cesarean section

The Gonads and Development of Sex—Halban presents an array of arguments to prove that the gonads in both sexes produce a qualitatively identical substance which has a protective and promoting action on the supply of sex characters that happen to be present in the individual During pregnancy, he theorizes the placenta takes up the task of the ovaries and carries it on intensified His theory presupposes that in the fecundated ovum not only the sex is determined but the primary and secondary sex characters are already outlined His arguments tend to prove Steinach's theories untenable.

Malignant Suprarenal Tumors—Orthmann analyzes the records of 147 operative cases and 140 found in cadavers Of this total 286 cases, 66 were carcinomas 55 sarcomas and 115 hypernephromas Male subjects predominated (162 to 123 women in the operative cases and 84 to 54 in the others) The youngest patient was a girl of 16, the oldest a woman of 89 the majority were between 40 and 60 This analysis is followed by a minute description of a case in a woman of 42 who has been in good health since the removal of the malignant tumor in the kidney over a year ago No trace of any suprarenal glands on that side were found at the operation the tumor evidently represented the relics of the aberrant suprarenal tissue in the kidney

Hydrosalpinx—Jagerroos' long study of the etiology pathologic anatomy pathogenesis and the clinical aspect of hydrosalpinx is based on 100 cases and 58 anatomic specimens and on the literature In 70 operative cases recently reexamined the outcome has been gratifying in 45 salpingotomy cases In 5 others there are still subjective disturbances In another group of 3 there are both subjective and objective symptoms in one they are restricted to the other side In 14 salpingostomy cases the results have been perfect In 2 others the adnexa have become enlarged again

Deutsches Archiv fur klinische Medizin, Leipzig

June 7 1921 **136** No 3 4

*Streptothricho is of the Lung H Lenhartz—p 129
Splenectomy with Aplastic Anemia H Gorke—p 143
Electrocardiogram with Brief Contractions Mandelbaum—p 154
Changes in Leukocytes After Infusion L Nurnberger—p 159
Edema of Extrarenal Origin Nonnenbruch—p 170
*Action of Quinidin on the Heart E Boden and P Neukirch—p 181
Connective Tissue in Cure of Cancer M Fraenkel—p 197
Sino Auricular Block E Edens—p 207
*Rare Form of Anemia W Knoll—p 237

Streptothrichosis of the Lung—Lenhartz' case is one of the few instances of recovery from streptothricosis of the lung The symptoms in the man of 33 a coachman had been those of croupous pneumonia of the lower lobe at first but their persistence pointed to tuberculosis There was continuous fever at 39 C (102 2 F) for the first eight weeks then it became intermittent After numerous negative punctures pus was obtained and pure cultures of the streptothrix were obtained on anaerobic cultivation and from the ascitic fluid of animals inoculated with it The progressive course compelled active intervention and the ninth rib was resected in the axillary line The mycosis subsided completely after the evacuation of ¾ liter of pus containing the fungus in abundance The man succumbed a few weeks later to erysipelas of the larynx and face and necropsy confirmed the complete cure of the mycosis

Aplastic Anemia—Gorke removed the spleen in a case of aplastic anemia in a previously healthy butcher of 53 He hoped by this means to stimulate the blood producing organs but the man died the same day In three similar cases on record the patients died in a few hours after the splenectomy The slight destruction of hemoglobin as evidenced by the lack of urobilin in the stools the small proportion of pigment in the bile the epinephrin test and the catalase index are useful in the differential diagnosis of aplastic anemia In conclusion he tabulates the features that distinguish aplastic and pernicious anemia from each other and from purpura

Edema of Extrarenal Origin—Nonnenbruch found the blood extremely concentrated in three patients with kidney disease and edema In three other cases even copious ingestion of water with scanty diuresis did not dilute the blood but seemed rather to render it even more concentrated

Action of Quinidin—Boden and Neukirch report constant success with quinidin in treating extrasystolia and paroxysmal tachycardia With absolute arrhythmia they found the action uncertain in seventeen cases only seven were restored by it to normal rhythm and this only transiently They describe research with it on the isolated rabbit and fetal heart, and compare the findings with those of others

New Factors in the Fight Against Cancer—Fraenkel hails as new factors the attempt to use the roentgen rays to enhance the defensive forces of the body rather than to annihilate the cancer directly and especially Ribbert's ob er-

vation of the spontaneous destruction of cancer cells under the influence of lymphocytes Cancer cells seem to be susceptible to the action of toxins liberated by the destruction of lymphocytes, and we know that radiotherapy is influential in increasing production of lymphocytes and also in their destruction Radiotherapy therefore should not be restricted to attacking the cancer, but should be applied to stimulate the defensive forces, and chief among these the connective tissue Embryology and study of callus, scars, etc, show that this is far more than a mere supporting tissue It is not strong enough however to stop the encroachment of the cancer Our task is to strengthen and reenforce the connective tissue and this we can accomplish he reiterates, by the stimulating dose of roentgen rays Gynecologic cancer is most admirably located for this as the connective tissue and the endocrine glands here are in the most favorable relations for the rays to be effectual in this respect The endocrine ovaries, with their intimate connection with the thyroid thymus and suprarenals are stimulated by the roentgen exposures, as also the connective tissue in the region This explains the success with uterine cancer in contrast to what has been realized to date with other cancers, the mammary for example We must attack cancer by promoting endocrine functioning and by stimulating the connective tissue by direct raying and, indirectly, by raying the thymus His experimental research has demonstrated the special relations between the thymus and the connective tissue He even includes the connective tissue in the endocrine system Its close connection with this system is apparent in its dependence on the different phases of development of the thyroid and the thymus, as is evident in various constitutional affections, in senile processes and in the effects of radiotherapy Kevsser's research has demonstrated that even the highest doses of the rays are not able to kill cancer cells absolutely In the cases of cancer cured by radiotherapy the effect Fraenkel declares, was due not to destruction of the cancer, as has been assumed hitherto, but to stimulation of the defensive forces

Sino-Auricular Heart Block—Eden's study of the atrioventricular automatism is accompanied by thirty electrocardiograms of a number of cases under the influence of various drugs

Rare Form of Anemia—Knoll reports the case of a boy of 9 with the inguinal glands showing dark blue through the skin and large spindle shaped cells in the blood as also macroblasts with nucleoles The blood findings are shown in a colored plate

Deutsche medizinische Wochenschrift, Berlin

June 2 1921 47 No 22

The Functional Properties of Vitamins F Burgi—p 613
*Experimental Foot and Mouth Disease M Hobmaier—p 616
Effect of Poisons on Body Spirochetes L Dub—p 618
Arsphenamin Dosage K Biele—p 619
Parallel Serologic Tests W Weisbach—p 620
Artificial Virulence in Relation to Chemistry H Much—p 621
Complications of Appendicitis Kummell—p 622 Concn
Localization of Abdominal Pain F Bruning—p 624
*Leukocytes in Inflammation E Unger and A Wisotzki—p 625
Artificial Pneumothorax in Pneumonia H Burckhardt—p 625
Postoperative Paradoxic Embolism in Systemic Circulation with Open Foramen Ovale R Hensel—p 625
Treatment of Polyneuritis Rubens—p 626
*Effect of Antivenereal Prophylactics J Schumacher—p 626
*Recurrence in Infantile Gonorrhea I E Valentin—p 628
Present State of Knowledge of Heart Failure Hering—p 630
Children Who Do Not Seem to Thrive L Langstein—p 632

Susceptibility of Small Experimental Animals to Foot-and-Mouth Disease—Hobmaier states on the basis of his investigations that the virus of foot-and-mouth disease is always infectious for guinea-pigs Some of the strains produce foot blisters, others only the abortive type of foot-and-mouth disease The virus can be cultivated through only a limited number of generations in the body of guinea-pigs The incubation period is usually from two to three days, but it may be a week or even longer Not only guinea-pigs but also rabbits, rats and chickens are susceptible to foot-and-mouth disease, sometimes evidencing the acute and sometimes the abortive form The skin nodules that arise following intracutaneous inoculation of guinea-pigs rabbits and rats with virulent strains contain the living virus of foot-and-mouth disease Guinea-pigs inoculated with the virus develop a general infection with eruption of vesicles on the feet Therapeutic serums and, to a not much less extent, normal serums exert an inhibitive effect on the development of the disease in guinea-pigs This finds expression in the lengthening of the incubation period and diminution or suppression of vesicle formation

Distribution of Leukocytes in the Blood in Inflammatory Processes—Unger and Wisotzki have been investigating in connection with the increase of leukocytes in the blood in inflammatory processes whether the increase affects the whole vascular system alike or whether the distribution is unequal They arrived at the interesting conclusion that in man the vessel leading to an inflammatory focus, the arterial blood, contains more leukocytes than the efferent vein Leukocytes are held back at the site of the inflammation Fewer white corpuscles leave the inflammatory focus than are carried to it The capillary blood contains even fewer leukocytes than the vein

Effect of Antivenereal Prophylactics—Schumacher says that Metchnikoff's calomel ointment has been universally condemned as having no prophylactic value against syphilis The Neisser-Siebert preparation is a good prophylactic if it is fresh, but in metal tubes in which it has been frequently dispensed, it deteriorates rapidly It should be put up in porcelain or glass tubes Schereschewsky's quinin ointment keeps well in metal tubes and is effective All investigators are agreed that solutions are more effective than ointments A 0 1 per cent solution of mercuric chlorid in the hands of those who know how to use it gives good results After coition the urethral orifice should be cleansed with a cotton swab dipped in the solution As prophylactics against gonorrhea the various silver preparations such as protargol are satisfactory Solutions are better than ointments here as well There is great danger of stricture of the urethral orifice if strong solutions of protargol (from 10 to 20 per cent) are used Much weaker solutions will have the desired prophylactic effect and even then strictures will occasionally result One objection to the silver preparations in watery solutions is that they are not stable Schumacher thinks that this is one very good reason why one preparation may be well recommended to serve as a prophylactic against both syphilis and gonorrhea He thinks that if a 0 1 per cent solution of mercuric chlorid is used against syphilis and the urethral orifice is carefully cleansed with the little finger dipped in the solution or a cotton wrapped match it will protect against gonorrhea as well

Causes of Recurrences in Infantile Gonorrhea—Valentin relates her experiences in the treatment of 161 cases of infantile gonorrhea After from two to four weeks' treatment the course was suspended if the tests for gonococci were negative but in almost all of the cases examined after several weeks or months there was a renewed discharge which was found to contain gonococci The same treatment as the first time caused the discharge to cease and the gonococci to disappear in from four to eight weeks If the treatment was interrupted recurrences again set in Some children had three or more recurrences requiring them to be kept at the station for more than a year The cause for the many recurrences she finds in the fact that gonococci in the glands or neighboring organs were not easily accessible to the treatment In 61 of the children in whom recurrences occurred, gonococci were found to persist in the rectum

Monatsschrift f Geb u Gynakologie, Berlin

May 1921 54 No 5

*The Placenta in Therapeutics H Guggisberg—p 277 Idem E Puppel—p 280 Idem E Martin—p 288
*Myoma and Pregnancy F Heimann—p 292
*Primary Chancre in Vaginal Portion of Uterus B Liegner—p 298
*Typhoid Peritonitis J Richter and J Amreich—p 300
*Diathermia in Gynecology Sperling—p 309
*Radiotherapy of Peritoneal and Genital Tuberculosis S Stephan—p 314

Placenta Extract as Oxytocic—Guggisberg reported as long ago as 1913 that certain organ extracts, especially the placenta and the thyroid contain substances which promote

the contractions of the uterus The extract freshly derived from placenta tissue does not seem to possess any toxic action It is probably, he says, some proteogenous amin that exerts this nonspecific action on nonstriated muscle He here reports further experiences with it, and its more effectual action when combined with pituitary extract

Myoma and Pregnancy—Heimann illustrates the varying clinical pictures that may be presented and the indications with each as evidenced in three clinical cases In the first, a huge myoma was discovered in the uterine cervix at the fifth month of pregnancy and at term the woman was delivered by cesarean section of a normal child She succumbed a few days later to postoperative pneumonia In the second case a cluster of myomas interfered with the development of the fetus and the pregnancy was terminated by supravaginal amputation at the third month In the third case there was nothing to prevent the large myoma being treated conservatively, with normal delivery at term

Primary Syphilitic Chancre on Vaginal Portion of Uterus—Liegner cites Fuchs' discovery of the spirochetes of syphilis in the uterine cervix of women whose husbands presented contagious syphilitic manifestations and this before the women showed any indications of the disease except the positive Wassermann reaction This proved that the spirochetes were not from casual contamination Liegner reports a similar case from his own experience The diagnosis wavered between syphilis tuberculosis and cancer The hard edge of the process and the sudden development of severe symptoms beginning with hemorrhage confirmed its syphilitic nature The young woman had been sent to the hospital with the diagnosis of abortion but there were no signs of pregnancy No spirochetes could be found, but before the Wassermann test was completed extensive and severe secondary manifestations of syphilis appeared along with the primary lesion The Wassermann reaction is liable to be negative at this early stage, and the diagnosis may be very puzzling

Typhoid Peritonitis—In the case here reported the peritonitis developed after the rupture of an ovarian dermoid cyst which had been infected with typhoid bacilli and had suppurated No adhesions developed later The writers ascribe this to the fat contained in the dermoid cyst which protected the tissues against adhesion

Diathermia in Gynecology—Sperling states that a subjective cure was attained in 56 5 per cent of the 110 gynecologic cases in which diathermia was applied, and improvement in 43 5 per cent The relief of pain was the most striking effect and the promptest both in the cases with and without inflammatory processes in the adnexa or connective tissue It seldom failed to relieve, and then only in old chronic cases or in older women with hard and adherent processes Even in these apparently rebellious cases, the desired result was sometimes obtained with persistent application the lesions subsiding finally In one case this required seventeen sittings Recent cases are treated only with injection of turpentine

Roentgen-Ray Treatment of Peritoneal and Genital Tuberculosis—Stephan expatiates on the excellent results attainable with radiotherapy in all cases of tuberculous peritonitis with extensive adhesions but without ascites, irrespective of whether the genital organs are involved or not Attempts at operative intervention generally give deplorable results He also applies radiotherapy in the cases in which operative measures are refused or it is not practicable for any reason He applies roentgen-ray treatment further after the exploratory laparotomy in the miliary form with ascites By releasing the fluid the conditions are improved for the radiotherapy and the adnexa can be inspected better after the fluid has been drained off If the serous membrane alone is involved, he exposes the entire abdomen from front and back exclusive of the small pelvis By this means the genital organs are spared the castrating dose Even when the adnexa are involved he tries to save at least one functioning ovary in young women For these and other reasons an exploratory laparotomy is of great advantage, and the ovary to be left is carefully protected against the rays He describes an instructive case which encourages to apply radiotherapy in this form even in quite recent acute cases of peritoneal and genital tuberculosis

Munchener medizinische Wochenschrift, Munich

May 27 1921 **68**, No 21

Attempt at a Uniform Explanation of Manifestations of Paralysis in Infantile Cerebral Hemiplegia G Lyersbusch—p 627
Volatile Oils and Their Practical Value Heinz—p 628
Antiseptic Treatment of Infected Wounds J Finger—p 631
Thrush Fungus in Gastric Ulcers Meyenburg—p 633
Conservative Treatment of Streptococcus Abortions Neu—p 634
Suggestion and Hypnotism in General Practice Hattingberg—p 635
Births During Modified Twilight Sleep K J Wederhake—p 637
Symptomatology and Treatment of Hypernephroma Thierry—p 638
Abortive Cure of Primary Syphilis Spiethoff—p 640
Exact Diagnosis of Duodenal Ulcer H Lorenz—p 640
Expulsion Mechanism in Narrow Pubic Arch P Mathes—p 641
Apparatus for Lateral Roentgenoscopy of Stomach H Cramer—p 641
*Treatment of Surgical Tuberculosis F Konig—p 642
Accumulation of Iodin in Carcinoma Tissue G Riehl—p 644
Indications for Intubation F Hamburger—p 644
Treatment of Incarcerated Hernia F Stark—p 644
Friedmann's Tuberculosis Treatment L Zschau—p 644
Technic of Punctures Michael—p 644
Treatment of Cerebral Apoplexy R Geigel—p 645

Treatment of Surgical Tuberculosis—Konig warns against trusting too blindly to conservative treatment of bone, joint and gland tuberculous processes outside of well equipped institutions, saying that the results reported by Bier are something like an experiment on human beings as the ultimate outcome is not known yet Konig has investigated recently 1 932 cases of resection reported from twenty different sources five ten twenty or more years ago, and has found that although these were the gravest kinds of tuberculous processes 68 per cent have been permanently cured to date Bier replies to this that he has also seen many of these permanently cured' cases, and that it would be better to call them 'permanently crippled cases Conservative measures such as he has found effectual heal without crippling, and reach foci inaccessible to surgery In conclusion he adds to his previous directions that persons taking sun and air baths must be protected against wind Only on the very hottest days is a fresh breeze desirable for them (Bier's work was summarized last week, p 329)

Wiener klinische Wochenschrift, Vienna

May 26 1921 **34**, No 21

Etiology of Herpes Febrilis Luger and Lauda—p 251
Tuberculosis of Palmar Aponeurosis Simulating Dupuytren's Finger Contracture A Exner—p 252
Nontuberculous Caries of Bones Hamburger and Erlacher—p 253
Serologic Aspects of Syphilis Epstein and Paul—p 254
*Arsphenamin Treatment in Gangrene of Lung B Molnar—p 255

Arsphenamin Treatment in Gangrene of Lung—Molnar states that in the hospitals of Berlin during the period from 1897 to 1900 out of 133 cases of gangrene of the lung only 7 5 per cent were cured whereas 64 6 per cent of the patients died Of late years Becker has recommended arsphenamin treatment His results are said to have been strikingly good Molnar's experience with arsphenamin treatment confirms early favorable reports In two of his cases the condition had existed only for a week or two a cure was promptly effected In one case of a month's standing it required two months treatment and six neo-arsphenamin injections to bring about a recovery The fever disappeared after the second injection, but the sputum retained its bad odor until after the fourth injection The quantity of sputum decreased but slowly In a case six weeks old four injections (0 30 and three times 0 45 gm) brought some improvement, but in two cases of eleven and twelve months standing neo-arsphenamin could not be seen to have any effect In recent cases, therefore arsphenamin treatment should be employed at once without experimenting with other remedies The etiology of gangrene of the lung and of putrid bronchitis is not known Fusiform bacilli and spirochetes are doubtless important factors but there is probably no single causative agent

Zentralblatt fur Chirurgie, Leipzig

May 28 1921 **48** No 21

*Experiences with Parasacral Anesthesia E Staffel—p 729
Retention of Urine After Operation Polya—p 732

Experiences with Parasacral Anesthesia—Staffel reports from the Krankenstift Zwickau the results accomplished with Braun's parasacral anesthesia in the 413 cases in which it was employed during the last nine years Since 1912 it has

been the preferred form of anesthesia in all perineal and vaginal operations, uterus extirpations, operations for prolapsed uterus, plastic operations on the vagina and perineum, urethrotomy, and operations for cancer of the rectum. In only 18 cases the sacral plexus was not entirely blocked. No untoward by or after effects were observed in any case. There were 65 cases of cancer of the rectum, in which general anesthesia was employed in 8 instances, lumbar anesthesia in one and parasacral anesthesia in 56. In 2 cases parasacral anesthesia failed entirely and in 3 other cases general narcosis had to be employed to help out. Patients operated on under parasacral anesthesia leave the operating table in much better condition than those operated on under general anesthesia. As a rule one would not suspect from their appearance that they had undergone a serious operation.

Prevention of Retention of Urine Following Operations.—Polya, having repeatedly observed that after hernia operations and operations for hemorrhoids, rectal fissures and fistulas, a catheter had to be employed very commonly for several days after the operation, hit upon the plan of training patients in advance of the operation to pass urine in bed while in a recumbent position preferably while lying on the back. It was a difficult matter for some at first but the trick of it was usually learned in a day or two. Since this method has been employed out of thirty-one patients (twenty-nine men, two women) operated on for inguinal hernia only one (a man) has been catheterized and that only once. In a large percentage of other cases catheterization could be thus avoided.

Zentralblatt fur Gynakologie, Leipzig

May 28, 1921, 45, No. 21

Extraction of After-Coming Head of Dead Fetus. F. Sachs.—p. 742
*Undernutrition and Fat Content of Human Milk. C. Pasch.—p. 744
*Conjunctivitis in Babe and Puerperal Mastitis. J. Lang.—p. 750
Annular Bidiscoidal Placenta. J. Schiffmann.—p. 754
Recurring Retroperitoneal Fibromyxoma. B. Schwarz.—p. 760

Effect of Undernutrition on the Fat Content of Human Milk.—Pasch states after prolonged investigation that undernutrition, if only moderate, does not produce a diminution of the butter fat in human milk, provided the mother is in fairly good health. This finding agrees with that of Vollhase and Stau who reported that the fat content of unadulterated cow's milk during the war remained unchanged. Kirchner also found that cow feed that was below par as regards nutrients affected the fat content only slightly, although it did affect the quantity of the flow.

Conjunctivitis of the New-Born in Relation to Puerperal Mastitis.—Lang has been carrying on a series of investigations in the Brandenburg Midwives' Training School in connection with Feilchenfeld's communication at the 1920 gynecologic congress that there was a close causal connection between conjunctivitis in the new born and puerperal mastitis which rendered prophylactic measures imperative. In 455 parturients during the months of January and February, 1921 he found only six cases of mastitis, or 1.06 per cent. which corresponds in a general way to the statements of other writers, who report from 0.54 to 1.93 per cent. There was thus no increase in mastitis as Feilchenfeld had maintained. Not a single mother whose child had conjunctivitis presented mastitis nor did he find any bacteria in the conjunctival sac of children whose mothers were suffering from mastitis. However he did find that conjunctivitis among the new-born was more common than usual.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

May 14, 1921, 1, No. 20

*Obstetric Version. G. C. Nijhoff.—p. 2652
*Snapping Finger. W. P. J. Hoogveld.—p. 2663
The Function of the Otoliths. F. H. Quix.—p. 2670
Pituitrin in Obstetrics. P. Timmers.—p. 2674
*Hunger Strike in Prisons. S. van Mesdag.—p. 2675
The Tetrahedric Chest. K. A. Rombach.—p. 2677
Abscess Traced to Helminths. F. M. G. de Feyfer.—p. 2678

Obstetric Version.—Nijhoff tells of Irving W. Potter's systematic use of version in 1,200 obstetric cases, and reviews his arguments. Certain features of Potter's technic Nijhoff regards as progress, particularly his insisting that both feet should be drawn down, and that the arms should not be delivered until after the scapulae have passed the pubis, and then the foremost arm first. He is careful to insure that the fetal membranes are separate from the uterine wall, and warns that a man with a big forearm has no right to attempt to put it in a birth canal. Nijhoff comments that some of these features of Potter's technic are very old but have been forgotten so long that they seem new. The most impressive element of his technic is the tranquil way in which all proceeds from the knowledge that the child always has a chance to breathe. Nijhoff prefers hooking the mouth with two fingers or similar maneuver rather than applying forceps.

Snapping Finger.—In a case of snapping finger of the right hand a portion of the flexor tendon was found enlarged and tender. All disturbances ceased at once when the tendon sheath was incised and the strain on the overlarge portion released. The sheath was not sutured, but subcutaneous fat tissue was sutured over the cleft.

To Arrest Hunger Strike.—Mesdag tells of a simple means to conquer a hunger strike in a prison. He allows no food except milk, and does not allow any water in the cell except water for washing, and this is all made soapy before it is brought in. The hunger striker intends to refuse food but does not count on having nothing to drink. This soon overcomes his resistance. Mesdag has never known this to fail in several years of experience with this method while it never has done harm. He has had no experience with it in treatment of the insane who refuse food, and has never applied it other than to healthy prisoners.

Hygiea, Stockholm

June 16, 1921, 83, No. 11

Weight During Treatment for Syphilis. J. Almkvist.—p. 353
Lagging of Chest in Respiration. C. F. Waller.—p. 367

Changes in Weight During Treatment for Syphilis.—Almkvist records the weight twice a week of all syphilitics taking treatment. This has shown that the weight generally declines under mercurial treatment and increases under arsphenamin. This loss of weight under mercury may be the only sign of toxic action from the drug but he thinks that it must be regarded as indicating intoxication. Some persons lost weight under doses as small as 5 cg. of mercury salicylate while others bore up to 20 or 25 cg. It seems wise to counteract the decline in weight with extra-nourishing food and means to stimulate the appetite reducing the dose of mercury if the other measures are not promptly effectual striving however to keep the doses as large as is practicable without toxic action.

Lagging Half of Chest.—Waller applies the term retardatio medica to the condition in which one side of the chest lags behind in the respiratory movements. This is often an important symptom, but it is seldom heeded. It can be rendered very prominent by holding a spirit level or its equivalent against the front wall of the chest. In the normal, both halves of the chest expand symmetrically.

Ugeskrift for Læger, Copenhagen

June 16, 1921, 83, No. 24

Tests of Motor Function of the Stomach. A. Als-Nielsen.—p. 805

Tests of Motor Function of the Stomach.—Ten men and eleven women with normal stomachs were examined with the roentgen rays to determine the exact time when the stomach contents passed into the intestine. Then one or more of the five principal test meals were applied to 159 patients with various stomach or bowel derangement, and the findings are compared with each other and with the roentgen findings. It was found repeatedly that apparently normal findings with one of these methods of investigation were contradicted by the abnormal response to other tests. In 22 per cent. of fifty-one patients, the contrast meal left the stomach in three and a half hours while the Bourget-Faber test meal showed retention of over twelve hours. The majority in this group seemed to have gastritis. The various groups studied show that on the whole roentgen examination of the motor functioning may advantageously substitute the Bourget-Faber test meal. It should always supplement roentgen examination for other purposes.

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A PLEA FOR THE EARLY RECOGNITION OF THE SYMPTOMS OF UROLOGIC LESIONS*

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The present solid foundation of urology is based mainly on our ability to make an accurate and comprehensive diagnosis of lesions in the urinary tract The rapid and brilliant progress in this respect in our specialty is unequaled by any other in the many departments of medicine The development of the cystoscope, ureteral catheterization, the roentgen ray, and pyelography, and the estimation of the renal function, enable us, in the vast majority of cases, not only to determine accurately the pathologic condition present and to indicate intelligently the treatment to be followed in lesions of the urinary tract, but also to differentiate the often puzzling borderline cases in which the symptoms are suggestive of a urinary lesion, when the actual lesion is outside this tract and properly comes under the realm of the general surgeon, the orthopedist, the gynecologist or the neurologist

While these rapid strides have been made in urology, it cannot be truthfully said that the profession as a whole, has kept pace with its progress and possibilities Otherwise we would not see, as we do daily, in hospital and private practice, patients with undiagnosed genito-urinary lesions of long standing How frequently we see cases of so-called cystitis, in which an insidious tuberculosis of the kidney has become bilateral during months of internal treatment or misdirected bladder lavage, or hematuria, perhaps slight at first, with long intervals between bleeding, sufficient for a small papilloma, which could have been easily destroyed by fulguration, to become potentially or actually malignant, or a renal neoplasm become transformed from an operable to an inoperable case by the development of metastases, as well as cases of chronic urinary infection, in which a kinked ureter or some deformity of the renal pelvis has caused renal retention which has failed to recover after long treatment with urinary antiseptics and vaccines, or a pair of kidneys destroyed by a pyelonephritis from the continued back pressure of retained urine, due to stricture or prostatic obstruction

The foregoing statements may sound like an exaggeration of the facts, but they are not, as any urologist of experience can testify

QUALIFICATIONS OF THE UROLOGIST

While it is not to be expected that the more elaborate and intricate methods of examination and diagnosis, as cystoscopy or pyelography, are to be employed by any but the specially trained, the patient has the right to expect that his adviser is at least familiar with the existence of such methods and the indications for their use, and if he is not able to carry them out himself, his responsibility to his patient demands that he put him in touch with some one who can

Leaving aside for the moment the more elaborate methods of examination, there are certain procedures which are within the reach of every practitioner, from which logical and sufficiently accurate deductions to make a reasonable working diagnosis of genito-urinary disease can be drawn This involves no more nor less than the ability to obtain a good clinical history, to make a complete and careful physical examination, with the employment of some of the simples instruments of precision, and to have a moderate knowledge of laboratory technic Even the latter is not absolutely essential, as at present it is an isolated community indeed which has not access to some more or less well-equipped laboratory in which the ordinary urinary examinations, test for tubercle bacilli, estimation of renal function, Wassermann tests, and complement fixation reactions can be made But he must be able to draw proper conclusions from the facts obtained

SYMPTOMS OF GENITO-URINARY LESIONS

While in some lesions of the genito-urinary tract the symptoms are typical and suggestive of the location of the lesion, unfortunately in many they are quite the reverse, being suggestive of trouble in an organ or region quite remote from the one involved, which makes the clinical history as obtained from the patient often atypical and misleading This is particularly true in regard to pain, both in lesions within the urinary tract and those without That pain in the back is a sign of kidney disease is a belief firmly rooted in the minds of the laity This fact is much exploited by the quack, and the picture of an agonized human being hanging on to his loins, with the legend in big type, "Have you weak kidneys?" is familiar to all As a matter of fact, pain in the back is infrequently associated with chronic urinary lesions, and extensive destructive lesions of the kidney can occur from calculus disease or pyelonephritis due to obstruction at the bladder outlet, with no pain whatsoever Such a case, of giant bilateral renal calculi which had never given

* Chairman s address, read before the Section on Urology at the Seventy Second Annual Session of the American Medical Association Boston June 1921

any symptoms, recently came under my observation Such pain, as a rule, will be found on examination to be due to ostearthritis of the spine, sacro-iliac disease, back strain from faulty posture, etc These facts are more or less recognized by the profession What is not so well recognized, however, is that pain in genito-urinary lesions is often of the referred type, as seen in renal tuberculosis, in which the healthy kidney may become enlarged and tender from compensatory hypertrophy Failure to recognize this fact has led to fatal results more than once, when the good kidney has been judged the diseased one because it is palpable and tender, and has been removed without a preliminary cystoscopic examination

Other common examples of pain are those referred to the bladder in various renal lesions, to the loin in beginning epididymitis, to the perineum, suprapubic region, and various other locations in seminal vesiculitis, and to the glans penis in vesical calculus Pain in the acute lesions is much more suggestive, as in renal colic, but here again it is a fruitful source of error when occurring on the right side, as the symptoms are often confused with appendicitis and gallbladder lesions In fact, 25 per cent of our cases of ureteral calculus in which an operation was performed at the Massachusetts General Hospital had had a previous operation for appendicitis or some other supposed intra-abdominal lesion, without relief Pain is on the whole an unreliable symptom It should be considered only in combination with the physical examination and the urinary findings

Undoubtedly, the most constant symptom in genito-urinary disease is some deviation from the normal in the function of micturition And when the history of such deviation is obtained, an immediate physical examination, as well as an examination of the urine, is indicated For the latter procedure, it is to be remembered that in the female, a catheter specimen is absolutely necessary for accuracy Micturition occurs in the normal individual without difficulty, four or five times during the waking hours and, as a rule, not at all during the night The variations from the normal include increased frequency, day or night, or both, with or without pain and burning during or after the act, urgency, difficulty, retention and incontinence The occurrence of any of these phenomena has a widely differing significance in the various 'ages of man," and woman for that, and here again is to be considered only in combination with the physical and urinary findings In this connection, the polyuria of diabetes, of nephritis and of certain nervous conditions is to be kept in mind To attempt to discuss all of these in detail would be to open up the entire field of urinary diagnosis, which is far beyond the scope of this or any other paper It is my intention to dwell only on certain essential features of urinary disease, frequently overlooked, which demand a careful study of the urinary tract

EXAMINATION

The physical examination of the patient is of great importance and should be made in a careful and routine manner It should include abdominal palpation an examination of the joints for an existing or previous arthritis, or tuberculous processes, for the presence of scars of old sinuses, and for the condition of the reflexes, the taking of the blood pressure, the inspection of the external genitals, an investigation of the condition of the inguinal glands, and, when indicated, a pelvic or rectal examination The observer should have the necessary equipment to detect stricture of the urethra in the male, he should be familiar with the technic of aseptic catheterization, and should bear in mind constantly that gentleness above all things is essential in urethral and bladder instrumentation Of greatest importance is the examination of the urine A simple inspection of a freshly voided specimen will give a certain amount of information to the experienced eye, the presence of shreds being characteristic of prostatitis or a chronic urethritis Cloudy urine which does not clear with heat, acetic acid or on filtering indicates a bacilluria, and heavy white sediment, occupying a quarter to a third of the volume, is characteristic of pyonephrosis The presence of pus or blood in the urine demands an accurate determination not only of the source, but also of the cause Formerly much stress was laid on the various types of epithelial cells found in the sediment, but they vary greatly in different stages of an inflammatory process, and since the introduction of cystoscopy and ureteral catherization, less and less attention is paid to them The presence of pus in the urine signifies suppuration in the genito-urinary tract itself, or in some cavity or organ draining into it, and its localization becomes of extreme importance

The localization should be carried out in an accurate and routine manner In the male, a portion of the urine should be voided into two glasses, and some retained in the bladder If the first specimen is cloudy and the second clear, suppuration is limited to the anterior urethra The prostate should then be massaged, and the remaining urine voided If the prostate is involved, this specimen will show pus When the two glasses are equally cloudy, the prostate is to be excluded as the source of infection by an examination of the expressed secretion If this is found negative, a cystoscopic examination of the bladder and a study of the upper urinary tract should be made by means of ureteral catheterization, roentgen ray, etc It may be stated that when albumin is present beyond a very slight trace, associated with pus, and in the absence of blood, the upper urinary tract is always involved A persistent pyuria always demands a cystoscopic examination

Two of my cases are of interest in this connection, both having occurred in young men who had had a gonorrheal prostatitis and had received local treatment over a long period of time On examination, the prostatic secretion in each case was found negative, but the urine was cloudy from pus In one case, there was a residual urine of 4 ounces, and a cystoscopy disclosed a diverticulum of the bladder, which was cured by operation In the other case, the pus was found to come entirely from the left kidney A roentgenogram revealed a large left renal calculus which had never given symptoms It was successfully removed by operation The urine contained albumin in the second case, but not in the first Both of these had been considered as cases of chronic prostatitis

Occasionally, pyuria arises from sources outside the urinary tract, owing to the rupture of an abscess or of a diverticulitis of the large intestine into the bladder Such cases are to be recognized cystoscopically It is to be emphasized that inflammation of the bladder is always secondary to some other lesion, and that cystitis is the result of a prostatitis, inflammation or stricture

of the urethra, tuberculous or pyogenic infections of the kidney, new growths, calculi, foreign bodies, prostatic obstruction, diverticula, cystocele, the pressure of uterine or ovarian tumors, or lesions of the central nervous system It cannot be relieved until the underlying cause is determined and removed But as the symptoms presented by all of these lesions are mainly those of vesical irritation, treatment is empirically directed to the bladder itself, and, in spite of all that has been written and said, the idea that cystitis is a separate entity sticks like a bur

IMPORTANCE OF HEMATURIA AS A SYMPTOM

Hematuria is a symptom of most vital importance and should always be investigated, however slight or transient it may be It is to be remembered that it is only a symptom and not a disease It arises from a great variety of causes, both local and general, and may come from any part of the genito-urinary tract We not infrequently hear the phrase, "I have been unable to control the bleeding," or "The hemorrhage continues in spite of such and such a remedy" This is a most pernicious doctrine As a matter of fact, very few of the lesions producing hematuria are influenced in the least by internal medication or styptics or astringent washings Still, none of these should be employed unless the location and underlying cause of the bleeding is accurately known, as what may be valuable time, or rather invaluable time to the patient, may be lost Equally pernicious is the practice of giving a prescription to a patient with the advice, "Come and see me again if the bleeding recurs" Take, for example, the bleeding from papilloma or malignant disease of the bladder It is often the first and only symptom of these lesions, and long intervals of time, sometimes years, may elapse between bleedings The patient is, meanwhile, lulled into a false sense of security, only to find, on the recurrence of the hemorrhage, that his disease has progressed from one which could have been relieved to an incurable condition or one requiring extensive operation Fortunately, hematuria of a sufficient degree to be noticed by the patient generally alarms him to such an extent that he will seek advice But this avails him little, if the proper advice is not given It is amazing, however, at times, to find patients who will disregard a hematuria unless it is associated with pain or difficult micturition

Hematuria occurs clinically to an extent varying from microscopic blood to an amount sufficient to threaten life When due to an inflammatory condition, it is characterized by pain, and pus is found in the urine But many hematurias are entirely painless When the first portion of the urine voided is clear, and the second portion contains blood, the bleeding can be localized to the bladder in the female, or to the bladder or prostate in the male This condition is known as terminal hematuria Beyond this fact, nothing can be determined as to the source of the bleeding, by inference, and, when the blood is uniformly mixed with the urine, its origin can be diagnosed only by cystoscopic examination There is no other way to differentiate a symptomless hematuria of vesical origin from one of renal origin Either may be continuous or intermittent In a recent case of hematuria that I saw, occurring in a man of about 60, there was considerable enlargement of the prostate, and this was thought to be the source of the bleeding Cystoscopic examination, however, showed that the bleeding came from the right kidney, which was the site of a hypernephroma

Renal hematuria can be detected only when it is active Any case not bleeding at the time of examination should be reexamined while bleeding, if no cause is found in the bladder

Massive hematuria, sufficient to cause retention from clots, is generally of vesical or prostatic origin But this is not always so I recall a case which I saw during the war, of late secondary hemorrhage from the kidney, due to a gunshot wound, in which the bleeding down the ureter was so rapid that retention occurred Nephrectomy was successfully performed This condition has also been noted in the bleeding of renal tumors

The subject of hematuria is a large and interesting one, and it is obviously out of place to discuss its many features and causes, local and general, in this paper, strong as is the temptation to do so Suffice it to repeat that every case should be relentlessly followed up until proved guilty or comparatively innocent

AGE AND SEX AS FACTORS

Age and sex have a marked influence on the significance of urinary symptoms, and it may not be out of place to mention briefly some of the modifications due to these differences

The diagnosis of urinary lesions in children is subject to certain limitations not present in the case of adults, owing to the fact that cystoscopy and ureter catheterization cannot be employed below a certain age or, rather, size In spite of this limitation, the indications for their use in these little patients is, at times, quite as clear as in adults, as calculus disease, and tuberculosis and tumors of the bladder and kidney may be encountered at a very early age Small sized cystoscopes are on the market, both observation and catheterizing, and, under a general anesthetic, the procedure can be carried out in quite young children, particularly girls All cases of frequent, painful and difficult micturition or incontinence in children demand a careful local examination, as well as the examination of the urine, as it is only in this way that we can be sure that the so-called bed wetting habit is not a habit, but has behind it some serious pathologic condition Not infrequently, symptoms may be found to be due to mechanical obstruction, as a very small meatus or a pin-point preputial opening or a congenital stricture of the urethra Serious damage to the kidney from back pressure may occur from any of these, particularly should infection supervene Probably the most common urinary lesion in children is pyelitis, which is due to the colon bacillus This is characterized by fever, frequency of micturition, and a cloudy urine containing pus and bacteria This may occur as a direct infection from a vulvovaginitis in little girls Should the symptoms continue, the urine should be examined for blood, pus, and tubercle bacilli Should these be found, further study is indicated, by the roentgen ray and cystoscopy, if possible If not, the diagnosis will have to be made by operation

There is a very important group of cases which is frequently overlooked, occurring in young adults of both sexes These are the cases of early renal tuberculosis They are characterized almost entirely at first by symptoms of vesical irritation This first shows itself as a gradually increasing frequency of micturition The onset is insidious, and the frequency

is, at first, confined to the day Later the demands become more and more frequent and urgent, and nocturia supervenes Such symptoms as these, in the absence of any obvious cause, should at once arouse suspicion of a tuberculous process, and the urine should be examined If pus and blood are found, and the ordinary bacteria are absent, the suspicion becomes almost a certainty, and the urine should be examined for tubercle bacilli Nor, in the continuation of symptoms, should one be content with a single negative examination, either by the microscope or by guinea-pig inoculation any more than one would be governed by a single examination of the sputum Should tubercle bacilli be found, an immediate examination of the upper tract should be made, as early diagnosis and operation are of the greatest importance in this condition

Abnormalities of the pelvic organs in women are frequently the cause of urinary symptoms An examination will often disclose the presence of a cystocele, a urethral caruncle, or a tumor of the uterus or ovary, making pressure or traction on the bladder The female urethra, although short, is frequently the site of a chronic inflammation or stricture, and gives rise to symptoms erroneously ascribed to the bladder The treatment in all of these conditions is that of the underlying cause

As has been stated, when the urine remains persistently cloudy, the upper tract is to be investigated Acute pyogenic infections of the kidney are secondary to some systemic or local infection By this is meant some focus outside the urinary tract They tend to recover under conservative treatment, and proper attention to the focus of infection When they do not, their persistence is due to some abnormality of the kidney, renal pelvis or ureter, causing faulty drainage of the organ, or the presence of a calculus The indications for and methods of investigation in the bladder and upper urinary tract are the same in men as in women and have already been described

In the male, the anatomic structure of the urethra has a direct influence on the occurrence of urinary symptoms Acute gonorrheal inflammations of the deep urethra, the prostate and the seminal vesicles present well marked symptoms, and need no further comment The importance of the recognition of chronic prostatitis or its absence has already been mentioned Stricture of the urethra is a lesion of great importance, easily diagnosed, but frequently overlooked because it gives little trouble, as a rule, until the lumen of the canal becomes much diminished

SYMPTOMS OF OBSTRUCTION

This brings us to the consideration of one of the most important chapters, one might better say volumes, in urology obstruction at the vesical outlet in the male, with its disastrous chain of results, and its widely varying clinical picture It is not my intention, nor is it necessary here, to discuss the various forms of obstruction which may be present, or whether this or that operation is the one of choice for its relief The points to be established in any given case are these Is there obstruction present? If so, to what extent? How is this to be determined? And what is to be advised? Before taking up any of these, it may be well to emphasize the importance of a careful examination of the reflexes in every case of urinary difficulty in the adult male This as a routine measure may save much embarrassment, if nothing worse, to the patient and his attendant, as urinary symptoms are not infrequently among the earliest in tabes and other lesions of the central nervous system

What symptoms should excite suspicion of obstruction, and what measures should be adopted by the general practitioner to verify this? There is at first increased frequency of micturition, and the patient is obliged to void from two to four times at night This is apt to be associated with difficulty, and pain generally described as burning or scalding There is frequently urgency, and some lack of control of the vesical sphincter The attack may be ushered in by an acute retention of urine, the patient having had little previous difficulty But there is a wide variation in the extent and duration of the symptoms, and patients will frequently put up with a good deal of discomfort before seeking advice, for various reasons, among them being the impression that it is one of the unavoidable penalties of advancing years, or that all men have more or less difficulty, or through fear of being examined, or because "grandfather had a like trouble," etc , and some of these beliefs, I fear, unfortunately, some members of our profession share

The foregoing chain of symptoms is quite as characteristic of stricture of the urethra as of prostatic obstruction It is to be differentiated by an examination of the urethra The age of the patient is suggestive, as prostatic obstruction is most commonly encountered in the late fifties and beyond This however, does not eliminate the possibility of stricture, which may occur at any age, and, conversely, certain types of obstruction at the vesical neck may occur in much younger men All such cases should be subjected to a routine rectal examination The trained finger will at once detect any abnormality of the prostate The points to be observed are Is the gland uniformly and symmetrically enlarged, smooth and elastic? The adenomatous type Is it small, hard and movable? The fibrous type Or is it irregular, firmly fixed and of stony hardness? The malignant type The latter is sometimes difficult to differentiate from the chronic, inflammatory type

The rectal examination, however important in determining the type of prostate, is not an accurate guide to the amount of obstruction present There may be little or no residual urine in the presence of a large mass felt by rectum On the other hand, a small prostate may cause complete retention or a large residual, from the presence of a median bar or lobe The question of obstruction can often be readily answered by placing the hand on the abdomen above the pubes, where the overdistended bladder can be readily felt, sometimes as high as the level of the umbilicus These cases of chronic overdistention of the bladder are of a most serious nature, as there is generally an extensive destruction or at least a marked embarrassment of the renal function present from pyelonephritis, due to long continued back pressure The patient is practically always unaware that he has a full bladder, so gradual is the process What he notices is increasing frequency, which may result in overflow or the incontinence of retention If the urine is clear, these cases should not be catheterized, but subjected to suprapubic drainage There is often associated the signs of chronic urinary poisoning, as evidenced by the dry tongue, distention of the intestines, and sometimes hiccups and digestive symptoms These should always be looked

for, as they are of great import If retained urine is not to be demonstrated by palpation and percussion, the amount of residual urine is to be determined by catheterization This is a procedure not devoid of danger, but it should be carried out with all precautions in cases presenting urinary symptoms, with or without enlargement of the prostate, as felt by rectal examination

It may be broadly stated that a constant residual urine of 4 ounces or more indicates sufficient obstruction to require operation One cannot be dogmatic or arbitrary in this statement, and it must be qualified by the other elements in the case, brought out by the symptomatology, and the general physical and urinary examination Whether or not cystoscopy is to be employed as a routine in all cases of obstruction is a much discussed point In some cases it is obviously unnecessary, and in others absolutely essential Its performance is to be governed by the individual indication Cystography and the roentgen ray also have a definite place in the diagnosis of bladder and prostatic lesions The estimation of the renal function may be said to be of more interest to the surgeon than to the general practitioner

Here, as in all other urinary lesions, early recognition is of prime importance, and in view of the brilliant results following well advised prostatectomy in skilful hands, with all due regard to the preoperative and the postoperative treatment, even in seemingly desperate cases, no patient should be consigned to a catheter life, with the assurance that "he is too old" or that "he is too bad a risk," until all the facts in the case have been carefully weighed

CONCLUSION

In this necessarily brief and incomplete review of urologic symptoms, I have endeavored to lay stress on what may be considered some of the cardinal points in diagnosis My excuses for presenting these facts, so familiar to all genito-urinary surgeons, are that sufficient importance is not attached to the early symptoms of urologic lesions by the profession in general, nor is sufficiently painstaking physical examination carried out in many cases, as is constantly borne out by my experience In no class of disease is there more suffering, distress and embarrassment than that caused by lesions of the genito-urinary tract, and in no class of cases can a more accurate diagnosis be made or greater relief be afforded by operation It is only by the constant reiteration of these facts that better results can be obtained in early recognition and treatment, and it is our duty to the profession, to the laity and to ourselves to keep these facts constantly alive

374 Marlborough Street

Effect of the Active Substance of the Corpus Luteum and of the Placenta on the Growth of the Sexual Organs—Herrmann and Stein state, on the basis of experimentation with rats, that the active substance of the corpus luteum and placenta exerts a uniform effect in promoting the growth of the entire female genital tract, whereas, on the other hand it exhibited a retarding effect on the growth and development of the male genital organs In view of these facts, they think we may be justified in according to this substance a specific effect on the genital organs The effect of the substance on the male reproductive organs is clearly brought out by two illustrations in their article in the *Zentralblatt fur Gynakologie* **44** 1449, 1920, showing the difference in the growth in the treated and in the control animal

CURRENT PROGRESS IN THE SCIENCE AND PRACTICE OF ANESTHESIA*

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Anesthesia in its many and varied forms—general, local, spinal sacral, paravertebral, intravenous, colonic, oral, synergistic—dates from the first public demonstration of ether by Morton in the Massachusetts General Hospital, Oct 16, 1846, the word itself being coined by Oliver Wendell Holmes to fit the occasion The addition of chloroform, ethyl chlorid and nitrous oxid as general anesthetic agents, and the introduction of local and spinal analgesia, followed in the next few years All of the agents now used for anesthetic purposes were known in medicine many years before their anesthetic properties were utilized Ether was known for more than three hundred years, ethyl chlorid for more than one hundred, nitrous oxid and oxygen for seventy, and chloroform for sixteen years before Morton's successful demonstration

ANESTHESIA AND LIFE EXTENSION

Prior to 1846, surgery was crude and repulsive, and was therefore limited to the operations of absolute necessity Today, surgery is taking on, more and more an anticipatory aspect, its aim being a lessening of morbidity rather than of mortality But for the discovery of anesthesia, the blessings of surgery as known today would not exist The fact that Morton is the first and only physician whose name is enrolled in the Hall of Fame is an exact and just estimate of his achievement As the result of his success and the consequent advances in specialized and general surgery, it is no idle boast to state that the span of human life has been increased in the aggregate many hundreds of thousands of years

VALUE OF SEQUENCES AND COMBINATIONS

The evolution of the science and practice of anesthesia has been marked by the development of various methods, combinations and sequences which have modified the unpleasant effects in the induction period, increased efficiency during the course of anesthesia, and eliminated the period of nausea and depression during the time of recovery, thus more than doubling the safety of administration The statistics compiled by the Committee on Anesthesia of the American Medical Association for the years 1905 to 1912, in which are recorded over half a million administrations, show that sequences and combinations of anesthetics are safer and better from every standpoint than any one agent used alone For instance, the mortality with straight ether, according to this table, is one death in 4,533 cases, with sequences, the mortality of ether is in one sequence reduced to one death in 6,424 cases, and with another sequence to one death in 10,007 cases When oxygen is used instead of air with any general inhalation anesthetic, it adds to the immediate safety of the patient, as well as to his subsequent comfort The same can be said when any one of the agents employed is heated to the temperature of the body The addition of oxygen to nitrous oxid not only renders the patient's condition more comfortable after the operation, but it also increases his safety to such an extent that no administrator would be held blameless if he did not use this

* Chairman's address read before the meeting on anesthesia in the Section on Miscellaneous Topics at the Seventy Second Annual Session of the American Medical Association Boston June 1921

precaution Furthermore, with the addition of oxygen and warmth to the nitrous oxid, the administration may, under certain conditions, be prolonged without lowered blood pressure either during or after the operation, but the relaxation required for certain operations must then be obtained by the addition of other agents

On the other hand, the administration of nitrous oxid and oxygen without the addition of other agents is quite often positively dangerous, and the mortality is high The statistics of nitrous oxid are most misleading for the reason that, because it is the most expensive, this form of anesthesia is employed largely in private practice, probably over 90 per cent of the patients being private ones whose deaths are not recorded in the hospital statistics That this combination needs reinforcing is shown by the fact that ether containers are attached to all makes of apparatus, although some surgeons and anesthetists deny using ether Unquestionably, a patient's condition is better after the administration of nitrous oxid and oxygen, with small amounts of ether (from 1 to 4 drams) than when saturated with ether The smaller the amount of ether used, the less the resultant nausea, vomiting, and fall of blood pressure

SYNERGISTIC EFFECT OF MAGNESIUM SULPHATE

Can we entirely abolish the use of ether with nitrous oxid and oxygen and get the same resultant relaxation? Yes By utilizing the synergistic action of magnesium sulphate with morphin as a preliminary, we obtain a safer form of anesthesia with equally good relaxation and with less nausea, vomiting and depression afterward *Ether is thus absolutely eliminated, and* increased anesthetic efficiency is obtained

To the late Samuel J Meltzer is due the credit of having discovered the anesthetic properties of magnesium sulphate He erroneously attempted, however, to use this agent alone, as ether or chloroform was first used Not only does magnesium sulphate with morphin synergize the nitrous oxid and oxygen, but if used with ether it will reduce the amount required by from one third to one half, with no decrease in efficiency Magnesium sulphate has no deleterious effect on any of the tissues or organs of the body, and when used as a synergist it has no toxic effect whatsoever on the respiratory center It seems to act mechanically with morphin, holding this drug in contact with the tissues longer than it is able to maintain such contact alone, but with ether, and also with nitrous oxid and oxygen, it acts by deepening or increasing the effect, rather than by prolonging it Hence the same amount of morphin may be used with magnesium sulphate as with sterile water For instance, ⅛ grain of morphin in 1 or 2 c c of a 25 per cent solution of chemically pure magnesium sulphate is increased in value from 50 to 100 per cent, as compared to the same amount of morphin used in sterile water One hypodermic of the mixture will relieve pain for from ten to thirty hours, as compared with two to four hours with sterile water When magnesium sulphate is used with ether, the latter may be cut one third to one half in amount When magnesium sulphate is used with nitrous oxid and oxygen, the oxygen may be considerably increased and the nitrous oxid decreased

As the results are constant and the technic new, but simple, an outline might be appropriate at this time

One and a half hours before the operation a hypodermoclysis is aseptically given, of from 200 to 400 c c of a sterile and chemically pure 4 per cent solution of magnesium sulphate, at a temperature of 110 F, the solution running in by gravity in not less than thirty minutes No abscesses or sloughs have resulted One hour and fifteen minutes before the operation, the first hypodermic of ⅛ grain of morphin in plain water or in magnesium sulphate is given This is repeated at intervals of fifteen or twenty minutes, until three-eighths grain is given to the average adult If an idiosyncrasy is present it will develop before the time for the third dose

Quite often one-fourth gain is amply sufficient, especially for women The room should be darkened and quiet maintained, or the bed screened and a towel placed over the patient's face When ready, the patient should be lifted as gently and quietly as possibly, preferably on the operating table, and wheeled to the operating theater

When all is ready, the mask is applied to the face, and the oxygen started at the same time as the nitrous oxid Cyanosis should not be tolerated at any time, as the gases are used only to complete the analgesia and to render the patient unconscious The oxygen may be rapidly increased up to 35 per cent, or even 50 per cent, as the patient will be found to be fully relaxed, and pushing the nitrous oxid will merely add to the danger without increasing the efficiency A continuous administration is the most satisfactory

PRELIMINARY MEDICATION

Another factor that increases the safety of all inhalation anesthetics is preliminary medication When this is employed, anesthesia comes on sooner and with less excitement, and the margin between complete anesthesia and respiratory failure is lengthened, which means that the margin of safety is increased Furthermore, Dr T Drysdale Buchanan of New York has proved clinically that, with the open drop ether method, morphin and atropin decrease nausea and vomiting by more than 50 per cent The same rule undoubtedly applies to the other general inhalation anesthetics The use of magnesium sulphate with the morphin still further reduces the unpleasant effects, a state of analgesia taking the place of the depression that sometimes follows the use of morphin

With magnesium sulphate, morphin and nitrous oxid and oxygen, we can maintain a state of general analgesia with relaxation almost indefinitely, without any deleterious effects For the new era of anticipatory surgery, this form of anesthesia is a marked advance.

THE PROBLEM OF SHOCK

An important phase of the evolution of the science and practice of anesthesia is concerned with the problem of shock To E I McKesson of Toledo is due the credit of showing that when the blood pressure is taken at regular intervals during narcosis, if shock develops it will be revealed from fifteen to thirty minutes before the usual clinical signs indicate its presence

None of the general inhalation anesthetics seem to affect the cutaneous nerves unless the patient is thoroughly saturated with the agent employed When time permits, some local analgesic should be used for the skin, in addition to the general anesthetic To George W Crile is due the credit of introducing the use of a local analgesic in connection with general anesthesia With this combined method, a much lighter and therefore safer anesthesia can be maintained The objection to this method in general surgery is the element of time Many surgeons can complete an entire operation

in the time consumed in infiltrating the tissues with a local agent The utilization of the surgeon's time is one test of the efficiency of any clinic By employing synergistic methods, a complete block against pain impulses (including the cutaneous nerves) is secured, therefore the anociassociation method may now be considered obsolescent

ANOTHER FUNDAMENTAL PRINCIPLE

Yandell Henderson stated a fundamental principle that is applicable to all agents and inhalation methods, and that is that the patient should be kept "pink" at all times With the blood fully oxygenated, a patient is certainly better prepared for emergencies than when this precaution is not observed The pink patient is a constant factor in synergistic analgesia

NEWER METHODS FOR BRAIN AND LUNG SURGERY

The fact that so few surgeons take advantage of the fundamental factors mentioned may be in great part the cause of their general tendency to use local anesthesia As illustrating the advances of anesthesia in special surgery, it may be noted that a few years back only one or two surgeons in the United States had the equipment considered necessary to do the most advanced lung surgery Apparatus for endotracheal anesthesia, giving positive or negative pressure safely and as required, permitted this work to be done anywhere, even on the battle field A very great objection to this form of anesthesia is that, in order to introduce the tube into the trachea, an anesthesia deep enough to abolish all throat reflexes by ether saturation is a necessity This ether saturation means lowered blood pressure During the World War a new method of anesthesia for lung surgery was developed, requiring less machinery than is necessary with the endotracheal method, and also avoiding the primary ether saturation This method consists of obtaining an analgesic state by the preliminary administration of the maximum safe dose of morphin (average for adults of three-eighths grain by hypodermic), and producing unconsciousness and maintaining positive pressure by administering from 15 to 35 per cent oxygen with the nitrous oxid A pressure of from 7 to 10 mm of mercury meets all requirements, which pressure is easily determined by a mercurial manometer attached by a yoke to the respiratory bag Without a manometer, in those types of apparatus which have the bag close to the patient's face, this pressure may be determined as follows When the rubber bag is overdistended with the gases to such an extent that upon *full inspiration* the seams of the bag are *still* slightly distended, there is a pressure of from 5 to 7 mm of mercury Thus the patient is saved the ether saturation with the accompanying lowered blood pressure and temperature, and also the reaction that may follow ether saturation

The oil-ether colonic anesthesia for operations, especially about the face and upper thorax, is becoming more generally used as its safety and utility are recognized By synergistic methods, the ether has been reduced one-half In one clinic, the technic is to give 2 ounces of ether in 6 drams of oil by rectum, with or without paraldehyd, 2 drams This is preceded by morphin, one-eighth grain, in 2 c c of a 25 per cent solution of magnesium sulphate, the patient receiving in all three-eighths grain of morphin and 6 c c of magnesium sulphate The former practice in the same clinic was to give 3 or 4 ounces of ether The 6 c c of magnesium sulphate, plus procain for the skin, takes the place of 2 ounces of ether This probably is not the final technic, but it is mentioned simply to show how much has already been accomplished toward reducing the amount of ether used

OTHER METHODS

It seems clear that general analgesia is destined to replace general anesthesia, but, however innocuous it may be made, certain conditions and procedures require other methods For this reason, local, spinal, paravertebral and other forms of anesthesia have made tremendous strides A conservative estimate is that the use of the foregoing methods has increased more than 30 per cent within the last few years The use of certain methods, as intravenous anesthesia and spinal analgesia, seems to have decreased

SCOPE, UTILITY AND DANGER OF LOCAL ANESTHESIA

From the report of the committee appointed by the Section on Laryngology and Otology of the American Medical Association for 1920, we find that Matas of New Orleans states that he does from 55 to 65 per cent of all major operations by peripheral anesthesia As the result of improved technic in local analgesia, Colonel Gray, of the British Army, states, according to this report, that the mortality in cranial and brain injuries was reduced from 60 to 65 per cent to less than 30 per cent In operations on the brain and spinal cord, Dowman limits general anesthesia to children and extremely nervous adults whose cooperation cannot be relied on Local anesthes a is the method of choice of practically all American rhinologists, on account of lessened hemorrhage and supposedly greater safety The same report notes twenty-one deaths, fifteen of which were from cocain and five from procain In addition to this number, I have been informed by the chairman of that committee, Emil Mayer of New York, that twenty-two additional deaths have been reported within the last three years, making forty-five deaths from either the agent used or the method employed How this mortality compares with the mortality from inhalation anesthesia, we have no method of determining However, it may be stated as a general proposition that local analgesia is a safer method of procedure than general anesthesia On account of their injurious chemical properties, chloroform, ethyl chlorid and cocain should be excluded as far as possible from all methods

By excluding the undesirable agents and methods, and by a more extensive employment of the fundamental principles mentioned in this paper, both general anesthesia and local and general analgesia will be placed on a higher plane

40 East Forty-First Street

Causes of High Maternal Death Rates and High Stillbirth Rates—Abundant experiences teaches that high maternal and infantile death rates from causes connected with childbearing are associated with inadequate care afforded by ignorant and careless accouchers and nurses and that, conversely, low death rates obtain in the practice of well-trained and careful attendants even under environmental conditions ordinarily considered adverse It cannot be questioned that the risks to both mother and child, even in the care of the most intelligent and well-trained accoucheurs, are enhanced by those constitutional weaknesses racial or individual, inherited or acquired general or local, that influence deformities, accidents of pregnancy and labor, toxemias, and resistance to infection—W T Howard Jr, *Am J Hygiene* **1** 229 (March) 1921

THE ACAPNIA THEORY, NOW*

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It is now fourteen years since certain observations were published by one of us[1] from which the inference was drawn that diminution of the store of carbon dioxid in the blood and tissues induces profound functional disturbances the acapnia theory

"A great deal of water has run under the bridge" in fourteen years Terminology and point of view have shifted No one with the observations before him to which we have referred would today present them as Henderson did in 1907, as depending simply on deficiency of carbon dioxid When he found a low carbon dioxid content in the blood of an animal under anesthesia and operation, he called it acapnia Any investigator who now made such experiments as this and observed a low carbon dioxid would today term it low alkali reserve But the phenomenon is the same whatever the name It is only the inference from it which varies Most investigators would infer a condition of acidosis, but in such experiments as those just referred to it certainly is not acidosis

Cannon[2] found low carbon dioxid, that is, low blood alkali, in the wounded and shocked soldiers whom he studied in France during the war He inferred acidosis Henderson had found low carbon dioxid in the blood of dogs in experimental shock years before Cannon's interpretation of this phenomenon as acidosis differed fundamentally from that of acapnia But apart from all interpretation, Cannon's findings on men in the field of war and Henderson's observations on animals in the laboratory were identical

We shall discuss here chiefly postanesthetic depression We shall not say more than a few necessary words about shock Apparently it is an "omnium gatherum" of innumerable but quite disconnected conditions Investigators disagree on fundamental observations because they are dealing with quite different things—hemorrhage, cold, anesthetic depression vascular obstruction, concussion, intoxication, beside a number of purely artificial laboratory conditions

Probably—if we may hazard a guess from reading what has been published—the shock seen by surgeons during the war was chiefly hemorrhage Probably also some surgeons underrate the amount of blood their peace-time patients lose and the importance of even a moderate loss We once had a search made of hospital records, and it was noteworthy, first, that conditions accidents and operations not involving hemorrhage did not involve shock, and, secondly, that shock was usually recorded for operations and accidents which by their nature must have involved extensive hemorrhage But in the latter group of cases the hemorrhage was mentioned only cursorily or not at all This fact suggests strongly that the men who wrote or dictated those records did not note the real extent of the hemorrhage and did not realize its importance

Just a word here on the meaning of hemorrhage We are coming to regard it as a form of asphyxia The critical element is not, as we see it, so much the loss of serum as the loss of corpuscles The deprivation of the power to transport oxygen and carbon dioxid between the lungs and tissues (for the corpuscles are almost as important for carbon dioxid as for oxygen) is the crucial factor rather than mere depletion of fluid After hemorrhage, transfusion of blood is therefore far superior to an infusion of any saline or other artificial solution

THE TWO FORMS OF LOW BLOOD ALKALI

It is now well established that under anesthesia and operation there is a decrease in the blood alkali as measured by the carbon dioxid combining power In other words, the carbon dioxid content of the blood is low

Is this a matter of any significance? We[4] believe that it is, and that it is the cause, or is closely associated with the cause, of most of the postanesthetic depression of vitality other than that due to hemorrhage It also accentuates the effects of hemorrhage This low blood alkali, however, is not an acidosis, but quite a different condition

It is obvious that ordinarily an anesthesia lasting less than one hour, and not accompanied by a very extensive operation, does not involve more than a moderate depression of vitality Correspondingly, the decrease of the blood's content of alkali and carbon dioxid is of only moderate degree When the operation is extensive and prolonged beyond one hour, distinct depression is the common sequel The content of the blood in carbon dioxid and alkali is correspondingly decreased below that of the less depressed cases The etiology of these conditions was worked out partially, but so far as it went correctly, by one of us[1] a good many years ago But the explanation was not acceptable to the authorities of that day Such words as alkali reserve, hydrogen ion concentration, anoxemic acidosis and the ideas which they connote had not then come into use Accordingly, we are restudying the subject in relation to these now prevalent conceptions

Our results demonstrate that a low bicarbonate content may be due to either of two quite distinct processes One of these may be called the acidotic process, the other the acapnial process In the former the alkali is first neutralized by acids entering the blood, and the carbon dioxid falls secondarily In the latter the respiration is primarily excited, carbon dioxid is blown off, and it is now the alkali which falls secondarily as a compensation Both result in a low blood alkali, but in all fundamental aspects they are antithetical

The crux of the acapnia theory lies in the distinction between these two types of low blood alkali While

* Read before the Section on Miscellaneous Topics at the Seventy Second Annual Session of the American Medical Association Boston June 1921

1 Henderson Yandell Am J Physiol **21** 126 1908 **23** 345 1909 **24** 66 1909 **25** 310 385 1910 Henderson Yandell and Scarbrough M M Ibid **26** 260, 1910 Henderson Yandell Ibid **27** 152, 1910 Henderson Yandell and Underhill F P Ibid **28** 275 1911 Henderson Yandell and Barringer, T B Ibid **26** 288 352 399 Henderson Yandell Prince A L and Haggard H W J Pharmacol & Exper Therap **11** 202 1918 Henderson Yandell and Harvey S C Am J Physiol **46** 333 (Feb) 1918

2 Cannon W B Acidosis in Cases of Shock Hemorrhage and Gas Infection J A M A **70** 531 (Feb 23) 1918

3 Henderson Yandell Prince A L and Haggard, H W Observations on Surgical Shock J A M A **69** 965 (Sept 22) 1917 Morris W H J Biol Chem **36** 211 Reimann S P and Bloom G H Ibid **36** 211 (Oct.) 1918 Henderson Yandell and Haggard H W Ibid **33** 333 (Feb) 1918 Carter W S Effect of Ether Anesthesia on Alkali Reserve Arch Int Med **26** 319 (Sept) 1920

4 Henderson Yandell Haggard H W and Coburn R C The Therapeutic Use of Carbon Dioxid After Anesthesia and Operation J A M A **74** 783 (March 20) 1920

the details of this matter are recondite, the elements are quite simple We shall deal here only with the elements, merely referring to a long series [5] of papers already published by us, and still continuing, for a more detailed analysis

Suppose that we put a solution of sodium bicarbonate in a beaker, and place the beaker under a bell jar containing an atmosphere of air and 5 5 per cent carbon dioxid A certain amount of the carbon dioxid goes into solution in the fluid in the beaker, and the relation of this amount of dissolved carbon dioxid, or carbonic acid, to the sodium bicarbonate determines the acidity or alkalinity, or—as we now say—the hydrogen ion concentration To some extent this fluid is a simplified type of the blood of a healthy living man The plasma contains sodium bicarbonate, and the amount of dissolved carbon dioxid, or carbonic acid, is determined by the atmosphere which respiration maintains in the lungs

Suppose now that, in order to imitate the acidotic process, we pour a little hydrochloric acid into the beaker A part of the sodium bicarbonate is neutralized and forms sodium chlorid There is then less alkali present, and the relation of the carbonic acid to the bicarbonate is excessive The fluid is therefore more acid than before, and its hydrogen ion concentration is thus increased By removing some of the gaseous carbon dioxid from the atmosphere under the bell jar, however, the relation of carbonic acid to bicarbonate can be brought back so as to give the original hydrogen ion concentration Thus, for instance, if one third of the alkali has been neutralized, and the carbon dioxid in the air is also reduced by one third (that is, *from 5 5 to 3 75*), *the fluid, if freely exposed to the* atmosphere, will hold only two thirds as much carbonic acid as before Both the carbonic acid and the alkali have now been reduced by the same proportion, their relation, that is, the figure obtained by dividing one by the other, is therefore the same that it was originally, and the hydrogen ion concentration is the same

We have done virtually this experiment on animals by injecting acid into the blood When part of the alkali is thus neutralized, for instance one third, the animal's breathing automatically increases This pulmonary ventilation dilutes the atmosphere of the lungs with fresh air so that the carbon dioxid is kept, not at the original amount of 5 5 per cent, but in this case at about a third less The animal has then an acidotic low blood alkali

It is more difficult to imitate, by means of a mechanical scheme, the development of a low blood alkali through the acapnial process But let us go back to our sodium bicarbonate solution under the bell jar with air and 5 5 per cent carbon dioxid Suppose that now we begin by ventilating off some of the carbon dioxid in this air Immediately some of the carbonic acid will diffuse out of the fluid The alkali will then be left in relative excess, the hydrogen ion concentration is thus reduced, and the fluid is therefore more alkaline than before

We can perform this experiment not only on fluid in a beaker, but also on animals and even on men In fact, we have done it on ourselves many times Any one can do it by merely performing voluntary forced breathing The lungs are thus overventilated, and an excessive amount of carbon dioxid is washed out of the blood The acapnial alkalosis thus induced is the cause of the odd and often unpleasant symptoms which result [6]

It is what happens next which chiefly interests us here

If the overbreathing is prolonged, alkali soon begins to leave the blood This apparently is Nature's method of preventing the alkalosis from becoming extreme If urine is being secreted, it becomes alkaline [7] and thus carries away a part Apparently, however, most of the alkali passes into the tissues to be there stored, in some way as yet not fully understood, until recalled to the blood Thus, the condition of acapnia and alkalosis induces a low blood alkali Unlike the acidotic state, however, the alkali has not been neutralized, but has been forced out of the blood in the effort of the organism to combat an otherwise too acute alkalosis

It is fortunate for anesthetists that this compensation occurs It is quite clear now that, when respiration fails under ether, the apnea is largely due to the respiratory depression involved in *such an acapnial alkalosis* Blood relatively poor in carbonic acid, or relatively rich in alkali, has this effect on the respiratory center The normal man who voluntarily overbreathes for a minute or two, thus inducing a slight acapnia, has in consequence a period of apnea [8] Similarly, but in greater degree, the patient, who by unskilful etherization is kept in respiratory excitement for ten or fifteen minutes or more, would inevitably exhibit subsequently an alarming or even fatal respiratory failure, if it were not for the compensatory passage of alkali out of his blood

The compensatory passage of alkali out of the blood spares the anesthetist the anxiety of a respiratory failure The patient does not get off so easily If the blood alkali has been thus greatly reduced, a condition of profound depression may continue for hours, before the organism succeeds in reaccumulating the needed carbon dioxid and recalling alkali to the blood

In this depression the blood stagnates—probably in the abdominal vessels and viscera The skin vessels are constricted [9] The superficial veins become scarcely visible, or disappear The venous return to the right heart is deficient, [10] the cardiac action lacks adequate volume, and arterial pressure is low

Respiration is so much depressed that the oxygen intake is impeded and cyanosis is evident The reason is merely that, as carbon dioxid is the normal stimulus for breathing, and as the store of this substance within the body has been greatly reduced, *normal* breathing cannot return until a sufficient amount of carbon dioxid has reaccumulated in the blood and tissues The vital depression probably decreases also the production of carbon dioxid [11]

Meanwhile, anesthesia continues to a greater or less extent, *for the elimination* of ether is through t, e lungs, and the rate of elimination depends, therefore, on the

5 Haggard H W, and Henderson, Yandell J Biol Chem **39** 163 (Aug) 1919 **43** 3, 15 (Aug) 1920 Henderson Yandell Ibid **43** 29 (Aug) 1920 Haggard H W Ibid **44** 131 (Oct) 1920 Haggard H W, and Henderson Yandell Ibid **45** 189 199 209 219 (Dec) 1920, ibid to be published (July, 1921)

6 Henderson Yandell Bull Johns Hopkins Hosp **21** 1 1910

7 Leathes J B Brit M J **2** 165 (Aug 9) 1919 Collip J B Brit J Exper Path **1** 282 (Dec) 1920

8 Haldane J S and Priestley J G J Physiol **32** 225 1905 Campbell J M H Douglas C G, Haldane, J S and Hobson, F G J Physiol **46** 20 1913

9 Bryant John, and Henderson Yandell Closed Ether and a Color-Sign J A M A **65** 1 (July 3) 1915

10 Henderson, Yandell and Harvey S C Am J Physiol **46** 533 (Aug) 1918

11 Henderson Yandell Prince A L and Haggard H W Observations on Surgical Shock J A M A **69** 965 (Sept 22) 1917 Yandell J C Am J Physiol **54** 388 (Dec) 1920

volume of the pulmonary ventilation Full breathing is as essential to rapid termination of anesthesia as it is to rapid induction [12]

The blood alkali also continues low, for it is only as the blood's content of carbonic acid rises that the alkali is recalled from the tissues

Of course, such marked conditions as those here described occur only after prolonged anesthesia and operation By tact and experience, even without understanding the underlying processes, the skilful anesthetist minimizes their development To some extent, however, they occur after nearly every etherization

Obviously, the natural method of treatment to assist Nature to recover the normal equilibrium, which we call health, is by restoring the carbon dioxid Thereby we reverse the acapnial process We recall the alkali to the blood We induce a normal volume of breathing The oxygen supply is thus restored At the same time the circulation is supported by the increased venous return from the tissues—as is evidenced by the recovery of a normal skin color, the filling of the superficial veins of the arms and neck, the full normal arterial pulse, and the rise of arterial pressure to the same level as before the operation

All of this is accomplished effectively by means of an inhalation device [3] which we hope will soon be available for general trial and use For a long time the technical problem of controlled administration of carbon dioxid was baffling But we believe that the device to which we refer will prove both effective and safe By means of it any desired amount of carbon dioxid may be administered to the patient mixed with the inspired air, but with no appreciable degree of rebreathing, as rebreathing would impede the elimination of ether

When a patient who has been put back in bed after a prolonged operation is so treated, the first response is an augmentation in the volume of breathing Until this is obtained, the amount of carbon dioxid administered must be adjusted with caution With a little experience one learns how to push the dosage from this point on, and at this stage it should be pushed In a few minutes arterial pressure begins to improve The skin loses its leaden hue and becomes pink as the small vessels relax and fill, and the veins of the arms and neck begin to show again From this point on, the administration of the gas is reduced, so as not to push the circulation too hard By care in watching the distention of the superficial veins and adjusting the inhalation accordingly, we avoid an oversupply of blood to the right heart by the augmented venous return

Meanwhile the active pulmonary ventilation has rapidly aerated the greater part of the anesthetic out of the blood In some cases after only fifteen or twenty minutes the patient is conscious, and after a few minutes *more the administration of carbon dioxid may be* stopped

It is not our purpose here to deal with details of the practical application of this treatment We wish here merely to point out the crucial character of the evidence which this treatment affords regarding the validity of the acapnia theory

The argument is as follows Every one admits that after a prolonged anesthesia and operation the blood alkali is diminished This low alkali is the result either of the acidotic or of the acapnial process If the former were involved our patients would have died, instead of recovering For in animals in which the alkali reserve has been diminished by intravenous injection of acid, the administration of carbon dioxid does not recall a normal amount of alkali to the blood It cannot, for the alkali no longer exists in the body Indeed, such an animal when treated with carbon dioxid is overwhelmed by the acidosis, and usually dies After considerable hemorrhage,[13] the powerful stimulation of carbon dioxid must be administered with especial caution

Preliminary experiments on animals had shown us what we might expect in patients Of course we proceeded with great caution at first We ventured to push the treatment only as experience proved that it is safe

That this treatment works effectively and beneficially on patients affords crucial evidence in support of the acapnia theory

ABSTRACT OF DISCUSSION

DR YANDELL HENDERSON, New Haven, Conn Dr Gwathmey, in his address, spoke of a pallor that comes on after a time under anesthesia We have found that low blood alkali and this pallor are associated If you stop one, you stop the other The pallor indicates a defective circulation and that stagnation of blood, probably in the viscera, which is the cause of the low arterial pressure It is important, therefore to know what kind of low alkali occurs under anesthesia It is generally assumed that in nephritis for instance, we have essentially the condition which may be produced experimentally by injecting acid directly into the blood, and that all forms of low blood alkali must be of that type We have shown, however, that the low alkali under anesthesia is not of that type at all The body maintains with the utmost vigor, not a certain alkali or a certain carbon dioxid, but a certain relation between alkali and carbon dioxid If you decrease either one you upset that relationship When you inject hydrochloric acid into an animal, respiration blows off carbon dioxid in an effort toward compensation The relation of carbon dioxid to alkali is restored at a lower level for both We have shown also that an exactly opposite process may occur, namely, that if you ventilate the carbon dioxid off by overbreathing, alkali goes out into the tissues The alkali is still in the body and there is no indication for injecting sodium bicarbonate into the blood The indication is to recall alkali to the blood by restoring the carbon dioxid *The simplest form of hyperpnea is ordinary childish rage* The child starts tantrums to see if he can get his way He cries continuously for a time, then stops, and there is a period of respiratory failure until carbon dioxid reaccumulates In view of the great amount of carbon dioxid that is blown off in anesthesia excitement, it might seem strange that we *do not have more frequent respiratory failures* The reason is that as the patient blows off the carbon dioxid, the alkali begins to disappear from the blood in the effort to bring the relation of alkali to carbon dioxid back to the normal When the patient has blown off a great amount of carbon dioxid, the alkali cannot at once come back into the blood, for lack of carbon dioxid One of the points we have in mind is by inhalation of carbon to stimulate breathing during the half-hour period after the patient is put back in bed The surgeon seldom looks at his patient then He is through Even the anesthetist is apt not to see the patient, and it is only the nurse who is likely to be present to observe him Often the air breathed is so small in amount that the ether is not ventilated out of the lungs, and the anesthesia continues We have developed an apparatus to administer carbon dioxid *mixed with air We thus stimulate breathing* and put carbon dioxid back into the blood We have done this now with entire success in quite a number of cases, and we find that as we put the carbon dioxid back, the alkali is

12 Henderson Yandell Haggard H W and Coburn R C J A M A 76 672 (March 5) 1921

13 Haggard H W, and Henderson Yandell J Biol Chem., to be published

recalled to the blood, the skin color returns, the circulation recovers and vitality is restored

DR. FREEMAN ALLEN, Boston: I have not seen a case of acapnia which I could be sure was acapnia for at least three years, and I attribute it to using methods which provide for rebreathing. When you induce anesthesia by some method that provides for rebreathing, you have a material safeguard against acapnia. Also if you employ the rebreathing methods such as the semiopen or closed method, to which I am very partial, you safeguard against acapnia. I have been very much struck by this in certain cases of spinal anesthesia in which there have been symptoms of toxicity closely resembling shock. In these cases there is usually pallor, nausea, vomiting, sweating and great circulatory depression, and I have had the misfortune to have my worst cases in members of the profession—two physicians. The most available agent for restoring color, pulse and respiration has been rebreathing into the bag of a Bennett or Gwathmey inhaler. The results of rebreathing are apparent in three or four minutes. The color, respiration and pulse show marked improvement within this time.

DR. ANSEL CAINE, New Orleans: When using an open method for, say, throat work, with the mouth wide open, would it meet the ends required to administer, say, a 1 or 2 per cent. or 0.5 per cent. or whatever percentage is sufficient of carbon dioxid alone, with the agent which forces the ether into the mouth of the patient?

DR. ISABELLA C. HERB, Chicago: In reference to the matter of shallow breathing when the patients have been returned to bed, had morphin or any of the opium derivatives been given prior to the anesthetic? During the stage of excitement some patients breathe rapidly, in which case narcosis develops quickly. The patients who hold their breath become more or less cyanotic, and in this class there certainly is no overventilation.

DR. McKEEN CATTELL, Baltimore: Does acapnia account for acidosis occurring in all conditions of anesthesia especially when there is indication of shock?

DR. YANDELL HENDERSON, New Haven, Conn.: Lately we have tried to produce an asphyxial acidosis by means of the most typical form of asphyxia that of carbon monoxid. We have utilized a fact which we have recently discovered, namely, that after vagus section anoxemia does not induce hyperpnea. We find that under carbon monoxid asphyxia after vagus section there is no increase in breathing and no fall of alkali. This shows that an animal may be asphyxiated to the point of death, and if there is no overbreathing no fall of alkali occurs. That, I think, comes as near a perfect demonstration as any experiment can, that there is no such thing as asphyxial acidosis.

DR. RAYMOND C. COBURN, New York: Referring to the rebreathing in spinal anesthesia and the stimulating effect, that is a very characteristic effect and an important observation. But I also think that Dr. Allen will find that if he administers carbon dioxid in quite small percentage he will get a very much more pronounced stimulation. I have found in a limited number of sudden depressions that carbon dioxid administered in air is by far the most pronounced circulatory stimulant I have ever seen used. I have not used it very much and we have not come to very definite conclusions about it, but carbon dioxid in air seems to have given much better effect than carbon dioxid in oxygen. In regard to the use of carbon dioxid in operations, adding carbon dioxid to etherized air, will result in respiratory stimulation, and to a certain extent might supplement its administration after operation. From 3 to 5 per cent. would meet this requirement. From 7.5 to 10 per cent. is what we have used to stimulate a patient in a depressed condition. You have to administer nearly that much in order to get a pronounced effect. If you want only a slight effect, of course the lesser percentages will answer. As regards morphin accounting for the cyanotic depression after operation in those cases reported, in the cases we first reported we did not give morphin. And regarding the question of whether acapnia accounts for all shock under ether, we have always distinguished and made the exception of shock connected with hemorrhage. Hemorrhage per se produces shock which has no connection with carbon dioxid.

ETHYL CHLORID IN GENERAL ANESTHESIA

ITS ACTION ON THE CARDIOVASCULAR SYSTEM, A CLASSIFICATION OF SIGNS OF OVERDOSE*

ARTHUR E. GUEDEL, M.D.
INDIANAPOLIS

This report is based on observations made during the last five years with the personal use of ethyl chlorid in general anesthesia in about 2,000 cases. These were mostly for operations of from one to five minutes. About 200, however, were for operations lasting from fifteen minutes to one hour each. Nineteen cases carefully studied were of an average length of fifty-three minutes. Much of this work was done in France on soldiers, where, in addition to the personal cases above mentioned, it was my pleasure to be in close contact with the application of this agent, as an inducter for ether anesthesia, in many thousands of cases.

Most of my observations have been made on adults in good physical condition, the majority of these, wounded soldiers in France.

I do not care to enter into a discussion of technic, or of the various methods for applying this agent. However, the observations here presented held good in any method. In the majority of cases I used a gauze-covered mask of the Yankauer type.

Ethyl chlorid in overdose produces one of two sets of symptoms. I have designated these as the spasm type and the respiratory depression type.

SPASM TYPE

Approximately nine out of ten of all patients overdosed with ethyl chlorid manifest this type.

The first indication of approaching spasm is a sardonic grin, due to contraction of the muscles about the mouth. About the same time we notice a beginning contraction of the masseter muscles, and a beginning crowing of inspiration. This crowing, due to partially obstructed inspiration, is the real warning that the dose must be reduced.

If the overdose of the drug be continued, the spasm progresses rapidly until, in about one or one and a half minutes more, it will have become a complete respiratory obstruction, and a state of peripheral asphyxia is present.

Just what muscles are involved I have not been able to determine. Generally speaking, they are the facial muscles about the mouth, the muscles of the neck surrounding the pharynx, and the muscles of the larynx. The masseters start to contract early as stated above, and this contraction progresses rapidly and to a great degree. Only in the spasm of tetanus have I seen such a masseteric contraction. With this masseteric spasm well developed, it is practically impossible to pry the jaws apart sufficiently to insert a mouth gag.

With the general spasm well developed, all of the muscles of the body are somewhat rigid, though far less rigid than the muscles of the face, mouth, pharynx and larynx. The respiratory effort is violent.

The spasm, once inaugurated, develops so rapidly that cyanosis does not appear in the usual case until the obstruction is almost total. When it appears it develops rapidly, and half a minute later the patient is black.

* Read before the Section on Miscellaneous Topics at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

The rapidity of progress of the spasm is apparently in proportion to the vapor tension of the ethyl chlorid

In all ethyl chlorid anesthesias, there is apt to be a decided dilatation of the pupil during the early induction stage, which dilatation disappears, however, within a minute or two after the third stage of anesthesia is reached In the spasm type, the pupil does not again dilate until respiratory obstruction is almost total indeed, I have seen cases of almost total obstruction lasting half a minute, yet with no secondary dilatation of the pupil The patient's open mouth does not prevent this obstruction

In prolonged ethyl chlorid anesthesias, this spasm may reappear as often as the patient is overdosed In many cases, the latitude between operative anesthesia and wakefulness is so narrow, and the stage of overdose so close upon the operative stage, that it is difficult to maintain an anesthesia without many times entering the beginning of this spasm

During the spasm period, the systolic blood pressure is elevated to varying degrees in different patients I have seen the systolic pressure mount rapidly as much as 50 mm The highest rise occurs in about a minute following the spasm, and usually the rise is proportionate to the severity and duration of the spasm The average rise in light or, as I choose to call it, aborted spasm is from 5 to 20 mm

The diastolic pressure may follow the systolic upward, it may remain stationary, or it may fall as the systolic rises The fall of the diastolic with the rise of the systolic is usually proportionate to the systolic rise, thus maintaining a level average pressure When the diastolic rises with the systolic, this rise is usually much less than the rise of the systolic I have seen the systolic rise 30 mm with a rise in the diastolic of but 5 mm I recall one case in which, after eighty minutes of anesthesia, the systolic had risen from 120 to 170 mm, and the diastolic had fallen from 90 to 40 mm Pulse pressure at the beginning was 30 mm, and at the end, 130 mm This was an unusual case Indeed, cases showing this progressive equal divergence of the two pressures to any degree are usual

I make no further attempt at this time to analyze these varying changes in blood pressure, except to state that they have not occurred in other than spasm types in which operative anesthesia and the inauguration of the spasm stage were so close together that the recurrent spasm was frequent

The pulse rate increases during the spasm, as a rule proportionately to the increase of systolic pressure

There is a deepening of the spasm once inaugurated, for a period of a few seconds after the removal of the inhaler This is constant, and the anesthetist knowing it will be saved some worry

As for resuscitation in these cases of peripheral respiratory obstruction, the problem is the same as with overdose under any other anesthetic agent, namely, the removal, from the blood and tissue cells, of the excess of the drug However, in the spasm type this is not an easy task because of the rigid contraction of the masseters The mouth must be opened, the tongue pulled far out and vigorous chest compression made Even with the mouth open and the tongue out, there is still a great deal of obstruction However, the rapidity of elimination of ethyl chlorid makes the resuscitation successful in the good cardiovascular type I have not seen a death under ethyl chlorid but, in my early use of it, I have been more than once badly frightened

With knowledge of this action, there is ample warning from the beginning spasm to avoid the more serious aspects of it by the immediate removal of the drug, as soon as the beginning spasm is noticed

The beginner with this drug should always insert a substantial mouth gag before starting the anesthetic

DEPRESSION TYPE

This is a progressive central respiratory depression, and occurs in approximately one out of ten overdosed patients From the onset, the respiratory effort grows less both in volume and in rate The volume depression is greater than that of the rate With the continuance of the drug in overdose, this depression progresses to a complete respiratory paralysis in from one-half minute to two minutes, depending on the patient and the vapor tension of the drug The patient is perfectly relaxed, in every way

The picture during the deeper degrees of depression is one of collapse The color is ashen the pupils widely dilated and the respiratory effort, if present, is quite discouraging The picture resembles that of cardiac syncope But the pulse belies the picture

The pulse, although slowed in rate, is of good quality and regular In fact, it seems to be affected in rate only, and, in cases of light depression, not even in rate

The blood pressure does not fall to an extent that the change can be detected by palpation Because of the infrequency of this type, we succeeded in finding only two, during our detailed study of the clinical effects of this drug on the cardiovascular system In one of these two there was a rise in systolic of 30 mm and a rise in diastolic pressure of 20 mm, at the time of reduction of respiration to imperceptibility In the other there was a rise in systolic pressure of 18 mm and a drop in diastolic of 10 mm, at the time of complete respiratory cessation

Clinically, in many cases of this depression, I have not found any change in pulse by palpation, other than a moderate slowing The greatest fall in pulse rate that I have seen was from 100 to 50, in a period of five minutes, during one minute of which there was no respiratory effort whatever The normal anesthetic pulse rate reestablishes itself with the reestablishment of the anesthetic normal of respiration in any given case The slowing pulse rate begins with the slowing of the respiration, and progresses with the respiratory depression

As with the spasm type, this respiratory depression may repeat, during the same anesthetic, as often as the patient is overdosed Following recovery from this depression, the anesthetic may be continued as usual The type is constant, and the character of anesthesia secured is apparently better than that secured in the spasm type In the depression type there is a marked secondary dilatation of the pupils as the depression progresses This is not so in the spasm type

To the observant anesthetist there is ample warning of the approach of this depression, and there is no need that it be carried to the degree of total paralysis of the center If total paralysis should occur, however, resuscitation is simple There is no respiratory obstruction, and two or three forceful, manual compressions of the thorax serve to eliminate the excess of the drug from about the respiratory center, and automatic respiration is reestablished, to carry itself to the anesthetic normal in from one to four minutes

GENERAL OBSERVATIONS, REGARDLESS OF TYPE

The first stage pupillary dilatation is more marked with ethyl chlorid than with any other anesthetic This early dilatation is of no importance Dilatation of the pupil after anesthesia is well inaugurated does not occur except in overdose, and is then confined to the depression type

Calling attention to previous reports of frequent cardiac syncope with ethyl chlorid, in laboratory experiments on animals, I wish to state that, clinically, in man we have not found this to occur

It is impossible to predetermine the type in any individual, but once a type is manifested, it remains constant throughout the anesthetic I have seen but one case in my experience which manifested both spasm and depression types during the same anesthetic, and neither of the symptom syndromes was typical

An analysis of fifteen cases studied in detail is here presented The average length of these anesthesias was fifty-three minutes Van Slyke test of the blood before administration of the anesthetic averaged 57 4 per cent, and twenty-four hours later was 54 8 per cent Loss, 2 6 per cent

BLOOD PRESSURE READINGS

Blood pressure readings showed the following averages

Normal, systolic, 124, diastolic, 82
At start of anesthesia, systolic 136, diastolic 81
At finish of anesthesia, systolic 133, diastolic, 81
One hour after finish systolic 120, diastolic 75
Twenty-four hours later, systolic, 120, diastolic, 73

The blood pressure was sustained fairly well throughout The best comparison in the foregoing readings should be that pressure taken as normal, the day before the operation, and that taken one hour after the operation, which comparison shows a loss in systolic pressure of 4 mm and a loss in diastolic pressure of 7 mm

The pulse readings showed the following averages

Normal, 80
At start of anesthesia, 93
At finish of anesthesia 91
One hour after the finish, 78
Twenty-four hours later, 85

Here the only comparison of value is the normal count, as taken from the hospital chart previous to the operation, and that taken at the finish of the anesthesia This reading shows an increase in the pulse rate of 11 a minute

RESPIRATORY RATE

The respiratory rate based on a reading at five-minute intervals throughout all cases showed an average of 29 a minute Although these readings in so small a number of cases cannot be of great significance, they serve to show the absence of any great digression from the anesthetic normal as established by ether or nitrous oxid with oxygen

The foregoing study was made on average adults undergoing prolonged but extraperitoneal surgery

CONCLUSION

In the field of anesthesia, ethyl chlorid falls third in value to nitrous oxid-oxygen and ether I place it above choloroform in valuation It is applicable for short operations and for induction of ether anesthesia when nitrous oxid and oxygen are not available

ABSTRACT OF DISCUSSION

DR F HOEFFER MCMECHAN, Avon Lake, Ohio Some years ago I made a similar clinical study at the Cincinnati General Hospital, and also included the use of ethyl bromid I came to about the same conclusions that Dr Guedel reached, without, however, making the blood pressure test The types of spasm and depression occurred in my series of cases in about the same proportion as in his, and they were of the same type I agree with Dr Guedel that ethyl chlorid is a most valuable drug for inducing anesthesia, but I would sound a note of warning in using it as a preliminary anesthetic that it be used with caution if it is to be followed by chloroform-ether sequence In such use there is very apt to occur particularly in children a rapid and occasionally rather disconcerting cardiovascular depression The spasm type of reaction to ethyl chlorid will undoubtedly prevent anesthetists from using it in long operations, unless some method is devised by means of which it can be used concurrently with sufficient oxygenation not to affect the depth of the ethyl chlorid anesthesia and at the same time to provide sufficient oxygenation to eliminate the untoward respiratory symptoms For short operations, ethyl chlorid has certain advantages in its rapidity of induction, but it has equal disadvantages in the fact that it is not a very useful muscular relaxant In using it for setting fractures and reduction of dislocations, one has to push the anesthesia rather far Embley and Webster have found something like a proportionate difference of 19 to 1 in its toxicity But in comparison with the amount of anesthesia which must be used as between ethyl chlorid and chloroform, the larger quantity of ethyl chlorid brings down the toxicity of this agent virtually to that of chloroform

DR LINCOLN F SISE, Boston I used ethyl chlorid in the war on the men in the navy before I could get hold of gas, in order to make a quicker induction I followed that quickly with ether, using the two together for a short time, and then going on to straight ether and in that way would have these strong husky young men ready for operation in about five minutes, whereas with straight ether it would take twenty minutes or sometimes half an hour, to get them ready for operation I never saw the spasm stage but I did see an apparent vascular depression I made no blood pressure studies, but they certainly did pale out, particularly if put in an upright position It seems to me that for peace time work it is too dangerous to use, both in its immediate and in its postoperative effects

DR JAMES T GWATHMEY, New York I have been drawn to the same conclusions as Dr Guedel, and thought that ethyl chlorid would be a safe drug to use, so I had it prepared with certain amounts of oil and by passing gas and oxygen over this mixture I procure anesthesia quickly This method was used with children particularly and for induction only When the patient is slightly under the ether is turned on and nitrous oxid and ethyl chlorid and ether are used to maintain the anesthesia, but I secured better results by passing nitrous oxid and oxygen over and through anesthol However, I found very quickly, after using this mixture a half dozen times, that the last patients did not do so well as the first as the ethyl chlorid had disappeared from the mixture The practical point in this method of anesthesia is that you can increase the oxygen to 35 or 50 per cent and thus keep the patient pink as well as thoroughly relaxed throughout the operation

DR H E G BOYLE, London, England I discarded ethyl chlorid some years ago Dr Guedel has summed up the position most admirably It is applicable for short operations and for induction of ether anesthesia when nitrous oxid and oxygen are not available

DR ARTHUR E GUEDEL, Minneapolis Now that this subject of experiment is over, I have no use for ethyl chlorid, except in an emergency But as it must be used in an emergency occasionally it is well for us to have had the opportunity to observe its action, to discuss its use so that others may understand it and be prepared somewhat Answering Dr Sise's question, I have not seen it used in an upright position and I have not seen the depression which he speaks

of in a large series of cases Nor has the blood pressure studied shown cardiovascular depression in the series which I spoke of in prolonged anesthesia In regard to its relative safety, the best comparison I have to make is the determination of blood pressure readings after fifty-three minutes of chloroform, comparing that with the blood pressure readings after the ethyl chlorid experiment, you will find a much greater blood pressure reduction with the chloroform than we were able to obtain with the ethyl chlorid

HOW ANESTHESIA MAY AID AND PROTECT SURGERY*

E I McKESSON, M D
TOLEDO

Two general factors as they affect the surgeon and anesthetist are presented herewith namely, the diagnosis and treatment of circulatory depression, and the application of anesthetic gases at various pressures, in which the pressure is the essential factor in the narcosis and operation

Circulatory depression and surgical shock are still an open question Their etiology in the civil practice of surgery is not fully determined, since there are some who still assert that hemorrhage alone is responsible But as an anesthetist, having made an extended clinical study of the conditions in which pulse, respirations and blood pressures have been recorded, while watching the influences of various factors upon these functions, I am convinced that among the etiologic factors involved are the following, named in the order of their potency hemorrhage, trauma, overanesthetization, toxemia, pain and fear Any one of these may be the dominant factor in a given case, but more generally, fatal shock results from some combination of these influences Extreme trauma too often leads to overanesthetization, associated with oozing or frank hemorrhage in a patient poorly equipped to withstand their depressing influences

From a clinical study, it appears that circulatory depression in some degree is the forerunner in all cases of surgical shock And its degree, as indicated by certain pulse and blood pressure reactions, is a dependable measure of its severity, which, taken with its duration, forms a rational basis of prognosis and treatment

Without discussing those factors in the physiology and pathology of the circulatory and respiratory systems which are, however, the one fundamental requirement for the diagnosis of the patient's state, I shall direct your attention to those elements which are not so often considered The anesthetist is the only member of the surgical team who is in a position to make the necessary observations and conclusions during the operation

The number of deaths from circulatory depression occurring within from three to four days following the operation perhaps exceeds 1,000 a year in this country alone, which are preventable by early diagnosis and proper treatment

The surgeon has concerned himself largely in devising means intended to prevent this condition, and while prevention is of the utmost importance and should be universally sought for by all surgeons instead of the few, nevertheless this method has failed because ignorance, on the part of the surgeon, of what changes the patient develops during the operation prevents his adoption of better operative technic and the institution of treatment in time to be of benefit to the patient He has not utilized the experience of the anesthetist, and has either failed to urge or encourage this member of the operating group to employ those agencies which will furnish the necessary data for the good of the patient The anesthetist owes surgery the fullest service which a medical training can bring to the patient to cooperate with the surgeon in keeping him informed in accurate terms of the patient's reaction to the various procedures, especially as they effect such vital functions as the circulation and respiration Until such cooperation becomes general and intelligent, much future progress in preventing shock is not to be expected

Perhaps it needs to be repeated that no one is able to diagnose varying degrees or the progress of circulatory depression by merely feeling and counting the pulse, until the third stage with its classical signs has been reached The sphygmomanometer is the only instrument which we have for definitely indicating the pressure elements of the circulation, and to anesthetize for major operations without its use is inexcusable

While the normal ratio of pulse pressure to diastolic pressure is as 1 is to 2, in surgery there are many cases in which these ratios have been disturbed before the patient comes to operation The duty of the anesthetist is to attempt to keep the ratios as favorable as possible, but at least to counteract depression as far as it is possible to do so

Rarely, if ever, is surgery beneficial to the circulatory system at the moment of its performance, it is generally depressing Moreover, every known anesthetic is a depressant except when administered in less dosage than required to produce local or general anesthesia The loss of blood, if great, disturbs the relation of vascular tonus to the heart beat and reduces the oxygen carrying function, while, if small, the local disturbance of blood pressure may initiate an unfavorable readjustment of the vascular bed generally Favorable readjustment is, however, common if other depressing factors are slight, although I have seen a squirt of only three heart beats from a uterine artery lower the blood pressure 20 mm within two minutes! Trauma, especially within the abdomen and without appreciable loss of blood, is also depressing and quite as effective in the production of shock as hemorrhage in some cases In others, the patient may withstand considerable trauma with little damage

The normal reaction of an increasing pulse rate is an increase of blood pressures, and similarly, a decrease in pulse rate causes a fall in blood pressure Except in high pulse rates this reaction is obtained in surgery under anesthesia and is a good sign

Examples of circulatory stimulation characterized by an increase in blood pressures with an unchanged heart rate or a slower beat are infrequent, and when encountered it is usually due to fear or pain, which has been relieved with unconsciousness

THREE STAGES OF CIRCULATORY DEPRESSION

Clinically, we may divide depression into three stages or degrees by the pulse-blood pressure reactions or relations

First Stage—This is characterized by either a small increase in pulse rate without a corresponding increase

* Read before the Section on Miscellaneous Topics at the Seventy Second Annual Session of the American Medical Association Boston June 1921

(50 per cent of the increase in pulse rate expressed in mm of mercury) in systolic pressure or a small decrease in blood pressure without a decrease in pulse rate The first degree is commonly obtained in major operations and often accompanies minor operations with or without anesthesia or hemorrhage The first degree is not dangerous but is of prognostic value in estimating the patient's power of compensation when compared with the depressing influences applied to the patient just previous to its occurrence

Second Stage—This is usually characterized by an increase in pulse rate and a decrease in blood pressures amounting to 25 per cent, or more, of each This stage is regarded as dangerous and is the signal for the anesthetist to have restorative measures ready for immediate use should it merge into the third stage In some instances, at least, treatment should be started at this time, and the surgeon should always be advised so that he may be prepared to modify his operation if it becomes necessary This stage is dangerous since the heart is called upon for greater work, while its own nourishment and rest are reduced by the lowered blood pressure and shortened diastole At the same time the arterial muscle loses much of its tonus by the weak and too frequent pulse wave stimulations, thus further contributing to exhaustion and relaxation Small arterioles in the mesentery, and perhaps all over the body, which previously may have been invisible now may be readily demonstrated Whether the venules relax correspondingly in the second stage has not been demonstrated so far as I know

Third Stage—This is a further depression of the second, and in the adult, is characterized by a progressively increasing pulse rate above 100 and decreasing blood pressures below a systolic of 80 mm and a pulse pressure of 20 mm and less

The onset of the third degree during an operation indicates the gross incompensation of the elements of circulation—the inability of the patient to withstand the depressing influences upon the cardiovascular system, and marks the moment when active measures are to be instituted to assist the exhausted circulatory muscle, if not already undertaken This is the condition of the circulatory system when the classical signs of shock become manifested

Under suitable treatment I believe there is a period of time in which nearly every patient may be recovered from this vicious cycle This time period necessarily varies with the muscular reserve and presupposes an amelioration or elimination of the causes of depression

The reaction period after the third degree depression has begun may extend from minutes to three or four days before the patient either regains circulatory balance or dies of exhaustion But it appears from clinical observation that few patients recover if the third degree is allowed to continue progressively over a period of more than from twenty to thirty minutes

Twenty minutes is a short time in which to act, when it is remembered that in the average hospital more than half an hour passes before normal saline solution can be or rather is actually running into the vein of the patient after it has been ordered Its late introduction is quite as ineffective in restoring the patient as an insufficient quantity

Of the measures employed to restore blood pressure —pulse ratios compatible with recovery from a third degree depression, normal saline, Ringer's or Fisher's solution have given me the best results Blood transfusion is rarely available at the moment and probably not as safe

TREATMENT OF THIRD DEGREE DEPRESSION

Prophylaxis is always first, removal of the apparent causes, intravenous normal saline solution, warmth to the extremities Digitalis derivatives and camphorated oil may be employed with doubtful benefit

Fisher's solution seems to give good results, but physiologic sodium chlorid solution, if prepared, should be used rather than time being wasted in preparing Fisher's solution

Saline solutions have failed in shock, first, because administered too late, second, because the proper quantities have not been administered, and third, because they have been used subcutaneously They are used to fill up the vascular system and should be continued or repeated as necessary to keep it filled until the patient is able to maintain the blood pressures desired The patient may show decided improvement after 500 c c have been administered, but it is necessary to bring the systolic pressure up to within from 10 to 15 mm of the patient's normal pressure and to maintain this pressure by slow additions of the saline solution until the operation has been completed After the patient is put to bed, the blood pressure should be watched, and intravenous injections repeated if the rectal drip fails to maintain the pressures during the next twenty-four to thirty-six hours, or longer The quantity of physiologic sodium chlorid solution which should be administered intravenously must be determined by the sphygomomanometer, and not measured by volume except as a matter of record It varies from 300 c c to 2 500 c c at one time

It will be found that physiologic sodium chlorid solution does not always elevate the diastolic pressure in its normal proportion to systolic pressure—that while the vascular system is filled, the arterial tonus does not recover so rapidly as the cardiac muscle For this reason one should also watch the relation of the pulse pressure to diastolic pressure and should stop the saline if the pulse pressure begins to exceed the diastolic pressure just before the desired systolic pressure is attained In this respect, Fisher's solution is better for intravenous injection in shock

COMMENT

I should not pass this subject without emphasizing the observation that deep relaxation from relative over doses of anesthetics are responsible for many cases of circulatory depression in which there is stormy convalescence, when recovery takes place The deep relaxation of striated muscle is accompanied by a similar relaxation of the cardiac and vascular muscles, and the old theory that deep anesthesia prevents shock is not borne out by the sphygomomanometer The lightest narcosis with which it is possible to operate gives the best results, and those anesthetic agents having the lowest power of muscular relaxation also result in fewer cases of shock, other things being equal

Respiration exerts a direct influence on the circulation The lungs and chest during inhalation aspirate the blood into the chest, and from the right ventricle into the lungs, while, during exhalation, the positive intrapulmonary pressure forces the blood into the left side of the heart and also assists the heart in discharg-

ing the blood into the aorta This function of respiration is often a potent factor in circulation when the heart itself is approaching exhaustion It explains, in part, the dyspnea sometimes seen With an adequate supply of oxygen administered under slight (1 to 2 mm of mercury) pressure during exhalations, to further increase expiratory pressure, the anesthetist may take over a small but appreciable part in circulation during a critical period of "heart fag"

USES OF RESPIRATORY PRESSURE

Without attempting to cover many of the other situations in which the intelligent anesthetist may aid surgery, I wish to call attention to the use of various pressures at which anesthetics may be administered to aid the patient or the operation This factor of pressure applies particularly to the use of gas-oxygen, although with suitable equipment it could be employed with other general anesthetics

In some goiters, or other growths obstructing the air passages, more or less, the patient is often threatened unless enough pressure is maintained in the inhaler to assist inhalations After the goiter is removed, if the tracheal rings have been absorbed for any distance, this pressure maintains the trachea patent during inhalations until the sutures may be so placed as to hold the trachea open or until a tracheal cannula is inserted

Pressure in the operations for quinsy applied through the nasal inhaler prevents the aspiration of pus and assists the inspirations of the patient In this disease, obstruction to the air-way is such a serious complication that patients are unnecessarily operated on without anesthesia

For the discharge of pus from the chest in empyema, an inhaler pressure of from 5 to 10 mm of mercury applied during exhalations will commonly clear the pleural cavity of large masses of exudate and restore the lung to its normal size, shortening the period of convalescence In this condition, the patient's circulation and respiration are often seriously embarrassed during even this short operation which a pressure of 2 or 3 mm of mercury will either completely relieve for the time or greatly benefit

Sudden vomiting and aspiration have drowned many patients during the period of narcosis This may be prevented by promptly inflating the lungs with oxygen under pressure This serves the two purposes of holding the fluid momentarily in the stomach while filling the lungs, and restores the glottis reflex, which prevents the aspiration of the vomitus Similarly, the administration of oxygen under pressure may be successfully employed to fill the lungs when a tonsil, adenoid, tooth, sponge, or chunk of meat has been inspired and threatens life by asphyxiation By filling the lungs and also by restoring the cough reflex, the patient is usually able at once to cough out the object without further assistance

In the acute pulmonary edema of cardiac incompensation, in which froth blocks the bronchial tree and the patient is apparently dying of asphyxia, the administration of oxygen under from 5 to 15 mm of mercury pressure during exhalations, suddenly released by lifting the inhaler during inhalations, has broken up the bubbles of froth, restored aeriation in the lungs, and saved the life of the patient in my hands While this procedure is usually encountered outside of surgery, it may occur during or following an operation and prove to be a life saving measure to the surgical patient [1]

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ABSTRACT OF DISCUSSION

DR ISABELLA C HERB, Chicago Surgeons and anesthetists have been laying stress on the respiratory system and overlooking to a considerable degree the importance of the circulatory system Circulatory failure is a common cause of respiratory arrest, as I have frequently observed in the operative surgery classes If a dog's chest was quickly opened after respiration ceased, it was noted that, although rhythmic heart movements persisted for a while, the contractions were not sufficient to drive the blood out of the heart into the general circulation On the other hand, in order to have efficient circulation, oxygenated blood must be brought to the coronary arteries which nourish the heart When the operative procedures require the prone posture, lung expansion will be facilitated by placing sand bags under each shoulder Most of the inspiratory work is done by the diaphragm, and it is therefore important that its descent should not be too much restricted by abdominal pads while the patient is in the Trendelenburg position In empyema, if the fluid is sufficient to put one lung out of commission, and the unaffected side is underneath, the patient may become alarmingly cyanotic from insufficient oxygen supply

DR FRANK L RICHARDSON, Boston We ought all to bear in mind the necessity of cooperation between the surgeon and the anesthetist One point in the treatment of shock which Dr McKesson did not emphasize as much as it deserves is the question of posture The elevation of the lower extremities in case of shock, after the patient leaves the table particularly, is of great importance, and I rely on this as one of the adjuncts in the treatment of shock

DR C E SAWYER, Lewiston, Maine The only form of anesthesia we use is an ethyl chlorid-ether sequence The men have been satisfied with it

DR C N CHIPMAN, Washington, D C The men I am working with practically leave the matter of stimulation or nonstimulation to the anesthetist Rarely are strychnin or digitalis used during the operation When they are to be used, the anesthetist is the one to say what and when it should be given, and what the patient should have immediately after coming from the operating room When shock is apparently starting in say, an abdominal operation, if the situation justifies it, I stop the anesthetic and let the patient regain consciousness The operator will have to wait We know very little about the nervous control that causes shock We do know however, that very little trauma about the great nerve centers of the abdomen will cause shock When the mechanism of the body is worked at a normal rate, it will stand a much greater strain than if we try to overwork it and then restore it to normal by various forms of stimulation, so that the time we take in allowing the body to regain its "normal nervous control" is fully justified by the results Another thing that you have to watch is the extreme Trendelenburg when a surgeon insists on packing sponges against the intestines and driving them down against the diaphragm With team work at all times, results will be much better

DR H E G BOYLE, London, England The relations of the surgeon and the anesthetist are extremely important The surgeon should realize that the anesthetists are their best friends, and they should at all times employ the men most skilled in this work Many lives would be saved if anesthesia were reserved entirely for duly qualified practitioners of medicine and surgery, and I sincerely hope that the time will soon be at hand when that will become law

DR HENRY I DORR Winchester, Mass With ether as an anesthetic, physiologic effects can be traced from its first action on the olfactory nerve through its field of operation to the sensory center Safely lies in not invading the center

1 Suitable charts for recording pulse respiration blood pressure etc are prepared by The National Anesthesia Research Society for general distribution The charts of cases shown at the meeting are omitted here to conserve the space of printing

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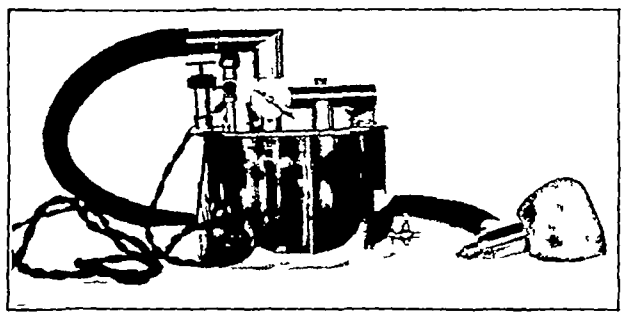

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to demonstrate the necessity of measurement in anesthesia, as the need seems self-evident Any scheme of anesthesia which is not based on measurement of dosage is crude, indefinite and unscientific, and is bound sooner or later to result in catastrophe even in the hands of the most expert

MEASUREMENT IN LOCAL ANESTHESIA

The drugs used in local anesthesia are introduced in aqueous solution The unit of measurement is either percentage of the drug in the solution or weight of the drug employed For controlling the local effect percentage of solution is the more convenient unit Unfortunately these drugs have a general as well as a local effect, and deaths have resulted from their use even in dilute solution Although the local anesthetics may be absorbed from any part of the genitourinary tract excepting the bladder ten times the usual dose is often introduced into the urethra An ounce of a 5 per cent solution of cocain, representing twenty-five times the safe dosage, is used in the course of

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ing the blood into the aorta This function of respiration is often a potent factor in circulation when the heart itself is approaching exhaustion It explains, in part, the dyspnea sometimes seen With an adequate supply of oxygen administered under slight (1 to 2 mm of mercury) pressure during exhalations, to further increase expiratory pressure, the anesthetist may take over a small but appreciable part in circulation during a critical period of "heart fag"

USES OF RESPIRATORY PRESSURE

Without attempting to cover many of the other situations in which the intelligent anesthetist may aid surgery, I wish to call attention to the use of various pressures at which anesthetics may be administered to aid the patient or the operation This factor of pressure applies particularly to the use of gas-oxygen, although with suitable equipment it could be employed with other general anesthetics

In some goiters, or other growths obstructing the air passages, more or less, the patient is often threatened unless enough pressure is maintained in the inhaler to assist inhalations After the goiter is removed, if the tracheal rings have been absorbed for any distance, this pressure maintains the trachea patent during inhalations until the sutures may be so placed as to hold the trachea open or until a tracheal cannula is inserted

Pressure in the operations for quinsy applied through the nasal inhaler prevents the aspiration of pus and assists the inspirations of the patient In this disease, obstruction to the air-way is such a serious complication that patients are unnecessarily operated on without anesthesia

For the discharge of pus from the chest in empyema, an inhaler pressure of from 5 to 10 mm of mercury applied during exhalations will commonly clear the pleural cavity of large masses of exudate and restore the lung to its normal size, shortening the period of convalescence In this condition, the patient's circulation and respiration are often seriously embarrassed during even this short operation which a pressure of 2 or 3 mm of mercury will either completely relieve for the time or greatly benefit

Sudden vomiting and aspiration have drowned many patients during the period of narcosis This may be prevented by promptly inflating the lungs with oxygen under pressure This serves the two purposes of holding the fluid momentarily in the stomach while filling the lungs, and restores the glottis reflex, which prevents the aspiration of the vomitus Similarly, the administration of oxygen under pressure may be successfully employed to fill the lungs when a tonsil, adenoid, tooth, sponge, or chunk of meat has been inspired and threatens life by asphyxiation By filling the lungs and also by restoring the cough reflex, the patient is usually able at once to cough out the object without further assistance

In the acute pulmonary edema of cardiac incompensation, in which froth blocks the bronchial tree and the patient is apparently dying of asphyxia, the administration of oxygen under from 5 to 15 mm of mercury pressure during exhalations, suddenly released by lifting the inhaler during inhalations, has broken up the bubbles of froth, restored aeration in the lungs, and saved the life of the patient in my hands While this procedure is usually encountered outside of surgery, it may occur during or following an operation and prove to be a life saving measure to the surgical patient [1]

2233 Ashland Avenue

ABSTRACT OF DISCUSSION

DR ISABELLA C HERB, Chicago Surgeons and anesthetists have been laying stress on the respiratory system and overlooking to a considerable degree the importance of the circulatory system Circulatory failure is a common cause of respiratory arrest, as I have frequently observed in the operative surgery classes If a dog's chest was quickly opened after respiration ceased, it was noted that, although rhythmic heart movements persisted for a while, the contractions were not sufficient to drive the blood out of the heart into the general circulation On the other hand in order to have efficient circulation, oxygenated blood must be brought to the coronary arteries which nourish the heart When the operative procedures require the prone posture, lung expansion will be facilitated by placing sand bags under each shoulder Most of the inspiratory work is done by the diaphragm, and it is therefore important that its descent should not be too much restricted by abdominal pads while the patient is in the Trendelenburg position In empyema, if the fluid is sufficient to put one lung out of commission, and the unaffected side is underneath, the patient may become alarmingly cyanotic from insufficient oxygen supply

DR FRANK L RICHARDSON, Boston We ought all to bear in mind the necessity of cooperation between the surgeon and the anesthetist One point in the treatment of shock which Dr McKesson did not emphasize as much as it deserves is the question of posture The elevation of the lower extremities in case of shock, after the patient leaves the table particularly, is of great importance, and I rely on this as one of the adjuncts in the treatment of shock

DR C E SAWYER, Lewiston, Maine The only form of anesthesia we use is an ethyl chlorid-ether sequence. The men have been satisfied with it

DR C N CHIPMAN, Washington, D C The men I am working with practically leave the matter of stimulation or nonstimulation to the anesthetist Rarely are strychnin or digitalis used during the operation When they are to be used the anesthetist is the one to say what and when it should be given, and what the patient should have immediately after coming from the operating room When shock is apparently starting, in say, an abdominal operation, if the situation justifies it, I stop the anesthetic and let the patient regain consciousness The operator will have to wait We know very little about the nervous control that causes shock We do know, however, that very little trauma about the great nerve centers of the abdomen will cause shock When the mechanism of the body is worked at a normal rate it will stand a much greater strain than if we try to overwork it and then restore it to normal by various forms of stimulation so that the time we take in allowing the body to regain its 'normal nervous control" is fully justified by the results Another thing that you have to watch is the extreme Trendelenburg when a surgeon insists on packing sponges against the intestines and driving them down against the diaphragm With team work at all times, results will be much better

DR. H E G BOYLE, London, England The relations of the surgeon and the anesthetist are extremely important The surgeon should realize that the anesthetists are their best friends, and they should at all times employ the men most skilled in this work Many lives would be saved if anesthesia were reserved entirely for duly qualified practitioners of medicine and surgery, and I sincerely hope that the time will soon be at hand when that will become law

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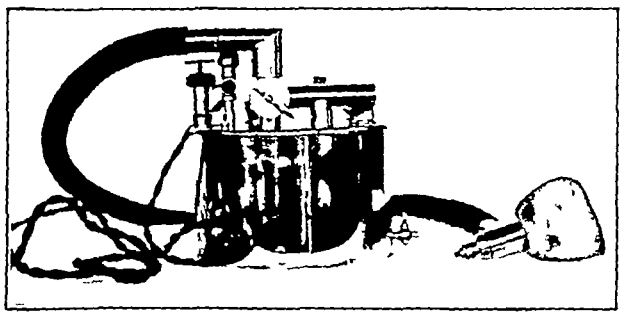

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a nasal operation The preferable, because safer, unit of measurement for the local anesthetics is weight of the drug

MEASUREMENT IN NITROUS OXID-OXYGEN ANESTHESIA

The present success in the administration of nitrous oxid-oxygen can be largely attributed to the routine use of measured dosage The two gases are used in a mixture free from air The unit of measurement in the constant flow administration is in liters or gallons of flow of nitrous oxid and of oxygen per minute, in the intermittent flow administration, the unit is percentage of nitrous oxid and of oxygen in the mixture Either method gives satisfactory results

ETHER VAPOR AND AIR MIXTURES

The determination of a unit of measurement for the volatile anesthetics, of which ether is the most prominent example, is a much more difficult problem The boiling point of ether is 2 5 degrees F below the normal body temperature It follows that, while under ordinary conditions ether is a liquid, at the temperature of the body it is a vapor, and has expanded to about 300 times its liquid volume The rate of vaporization of ether is variable, depending, at atmospheric pressure, on the rate of renewal of the atmosphere, the extent of the evaporating surface, and the temperature of the liquid ether As vaporization goes on the liquid ether steadily becomes colder, and the rate of evaporation as steadily decreases

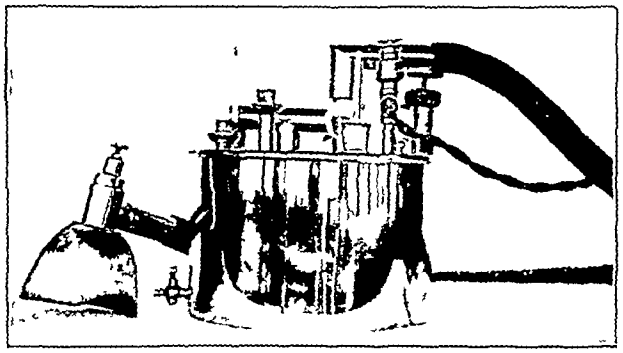

Fig 2—The constant temperature ether vaporizer back view From left to right inhaler water filler thermometer ether filler, mixing valve, ether gage heater thermostat

Pure ether vapor is practically irrespirable and is never used for anesthetic purposes, instead, a mixture of ether vapor with air is administered The mixture of ether vapor and air is formed in one of two ways In the usual manner a current of air is passed over the surface of liquid ether The steady reduction in the temperature of the liquid ether due to evaporation results in the constant diminution in the rate of vaporization, and a constantly declining percentage of ether vapor in the mixture The attempt to regulate exactly the dosage of ether by diluting the mixture with a known percentage of air must fail on account of the constantly decreasing percentage of ether vapor in the original mixture In the second method, known amounts of liquid ether are injected into the current of air If the flow of the air current is also measured, a very accurate measure of the vapor strength may be obtained

APPARATUS FOR ETHERIZATION

It is evident that ether can be administered with greater regularity and precision by a mechanical apparatus than it can possibly be administered by hand In the apparatus in which ether is vaporized by the passage of a current of air over the surface of liquid ether, the variation in dosage due to changes in temperature of the liquid ether is a serious objection The complication and expense of the apparatus injecting ether into the air current prevent their general use The constant temperature ether vaporizer here described for the first time makes use of a new principle providing for maintaining liquid ether, partly filling a container, at a constant temperature, the space remaining in the container being filled with ether vapor at a constant tension, depending on the temperature of the liquid ether, and providing for withdrawing from the container the ether vapor mixed with air to any desired percentage The container, which is 12 inches long, 2 inches wide and 3 inches deep, is submerged in a water bath which is kept at a constant temperature by an electric heater and a thermostat Openings are placed at each end of the container on its upper aspect, and in one of these is mounted a three-way graduated valve, by means of which the saturated ether vapor as it is withdrawn from the container is diluted with air to any desired percentage An outwardly opening check valve controls the exit from the container, and an outwardly opening valve for the expiration is mounted on the inhaler The unit of measurement is the tension of the ether vapor in the container The dosage is indicated in percentages of this tension With the thermostat set for 90 F, the average patient is anesthetized with a 50 per cent mixture, after the induction period The apparatus is very economical, using about 4 fluidounces of liquid ether during the first hour's anesthesia

MEASUREMENT IN ETHERIZATION

Three units of measurement have been proposed for the vapor strength of the mixture used in etherization percentage of ether to air by weight, percentage of ether vapor to air by volume, and ether vapor tension in millimeters of mercury As there is no method known for directly determining the tension of ether vapor in a mixture, this unit of measurement is rather of theoretical interest than of practical value Percentage by weight of ether vapor in air is readily determined by comparing the weight of the liquid ether with the weight of the volume of air, or by weighing the mixture by displacement in a Waller balance Percentage by weight is therefore a practical unit of measurement for the dosage of ether vapor Percentage by volume cannot be directly measured, but may be readily computed from the percentage by weight by taking into consideration the specific gravity of ether vapor and the weight of the volume of air From the data given, this formula is readily deduced

$$X = \frac{32\ P}{32 + 83\ (1\ 00 - P)}$$

in which X is the percentage by volume expressed as a decimal, and P is the percentage by weight expressed as a decimal Percentage by volume is a valuable unit of measure, as it provides a clear mental picture of the ether vapor dosage The theoretical tension of the ether vapor in a mixture is represented by the atmospheric pressure, 760 mm, multiplied by the percentage of ether vapor by volume, expressed as a

decimal It is important to keep these units clearly in mind The majority of papers dealing with ether dosage are valueless because the unit of measurement used has not been indicated and is unknown

The idea that air is displaced by the ether vapor in this mixture is incorrect Imagine a rigid container filled with 1 liter of air at the atmospheric pressure of 760 mm Introduce 1 62 gm liquid ether, and cork the vessel tightly The ether will completely vaporize and the vessel will then contain a liter of ether vapor at a pressure of 434 8 mm, in addition to the liter of air at 760 mm The total pressure will be 1,194 8 mm Uncork the vessel, and a part of the mixture will escape and become diffused into the surrounding atmosphere The mixture remaining in the container will consist of a liter of ether vapor at a pressure of 288 4 mm, and a liter of air at 471 6 mm, the total pressure equaling the atmospheric pressure In this process the air has not been displaced but has become rarefied as a result of the expansion of the mixture with ether vapor This is the process which is continuously going on during the vaporization of ether for anesthetic use Using the open method of etherization at a temperature of 68 F, the proportion of oxygen may be reduced 57 per cent, such a reduction in the oxygen pressure as is found in the atmosphere at the top of very high mountains Much of the nausea and vomiting following etherization is due to the rarefication of the air and is comparable to the condition of mountain sickness

RECTAL AND INTRAVENOUS METHODS

In rectal and in intravenous etherization, liquid ether is introduced into the body and is entirely utilized without waste The dosage in each of these forms of etherization is about 2 ounces of ether for the first hour's anesthesia

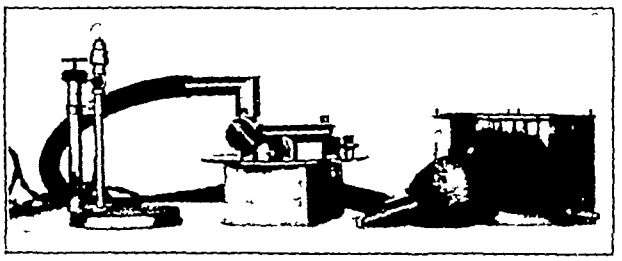

Fig 3.—The constant temperature ether vaporizer From left to right heater and thermostat ether chamber inhaler water bath

INSUFFLATION METHODS

In intratracheal and intrapharyngeal etherization, a mixture of ether vapor and air is formed at some distance from the patient, and passed into the respiratory tract through a tube in which the flow is maintained by a blower or pump The flow is constant, and independent of the respiration The rate of vaporization of the liquid ether depends on the factors already noted the rate of renewal of the air, the extent of the evaporating surface, and the temperature of the liquid ether The rate of flow of the mixture must constantly equal the maximum requirement of inspiration Delivery of the mixture into the trachea or the pharynx is efficient Delivery into the mouth or nasal passages cannot be relied on The strength of ether vapor in air required in these methods of etherization has been exactly determined

MEASUREMENT WITH THE USUAL METHODS

In the usual inhalation method, the evaporating surface is confined in a channel through which the entire quantity of inspired and expired air passes The atmosphere is constantly renewed by the respiration, the extent of the evaporating surface may be regulated to suit the conditions, and the liquid ether on the evaporating surface is kept at a fairly constant temperature by the warm expired air With the open method, it is inevitable that at least half of the ether applied shall be wasted, as the expiration as well as the inspiration passes through the evaporating material If care be taken to avoid all unnecessary waste of ether, a satisfactory measured dosage may be obtained

AMOUNT OF ETHER USED IN THE INHALATION METHOD OF ANESTHESIA

	Fluidounces of Ether		
	Average	Minimum	Maximum
First 5 minutes	1 95	1	2
First 10 minutes	3 06	2 5	4
First hour	9 64	7	16
Second hour	4	1	8

with the open method by measuring the volume of liquid ether applied to the evaporating material The unit of measure is in volume of ether rather than weight, because the volume is more readily measured The best results have been obtained with a funnel or cone 7 inches in length One end is fitted closely to the patient's face In the other end of the funnel is placed the evaporating material, consisting of a strip of No 1 surgical gauze, 14 by 36 inches Ether is applied to this evaporating surface fairly continuously, and, as the last drops of each ounce are applied, a note is made on a chart on which are divisions, each division corresponding to a five-minute period The most convenient measure is a 4 ounce graduated dropping bottle The accompanying table of ether dosage gives the result in 2,000 administrations by the method described

As the specific gravity of liquid ether is 0 718, the dosage by weight is 28 per cent less than the dosage by volume The dosage varies with the mental state and the physical stamina of the patient, and with the nature of the operation It is not directly influenced by age, sex, body weight, previous anesthesia, or changes in posture Operations on the stomach and gallbladder require a deeper anesthesia than does a simple incision A patient in good physical training requires more than the average dose the same patient after a week's confinement in bed takes less than the average The patient who is in the condition of shock may be anesthetized with a very small dosage The average dose might readily prove fatal in such a case

The anesthetist who has a knowledge of anesthetic dosage administers more or less as circumstances dictate, watching out for trouble with the surgeon if he is using less than the average dose, and looking for trouble with the patient if he is going beyond it The practical importance of this knowledge of anesthetic dosage is great, being comparable in value with all the usual signs of anesthesia

131 Waterman Street

ABSTRACT OF DISCUSSION

DR LINCOLN F SISE, Boston The percentage of ether given is a very exact unit of measurement, mathematically progressive from zero up, and this unit should be used in

speaking of the depth of anesthesia This brings up the question of giving ether by apparatus instead of by hand The advantage of it is the same We have here a definite accurate method of giving ether, against a more or less guesswork method when given by hand When given by hand we have to wait and see what the reaction of the patient is before we know definitely what we have done If we have a machine giving a certain and definite percentage of ether we know what we shall do to the patient before we do it Another point about giving ether by apparatus is that it relegates the mechanical process of delivering ether where it belongs, and leaves the intelligence of the anesthetist free to do what he has to do, to observe the patient and see the effect of the anesthesia and operation, and to record the facts connected with the anesthetization

DR BORIS RAPOPORT, Boston Very often after a morning's work of three or four cases in anesthesia I suffer from the absorption of ether If we have some method by which we can give the patient just so much ether and not take so much ourselves, it is a great work for the anesthetist The anesthetist should consider himself as well as the welfare of the patient

THE CONSERVATIVE TREATMENT OF CERVICAL LYMPHATICS IN INTRA-ORAL CARCINOMA *

DOUGLAS QUICK, M B (TOR)
Attending Surgeon, Memorial Hospital
NEW YORK

It has long been recognized that the successful treatment of intra-oral cancer depends more on the treatment of the cervical nodes than of the primary lesion During the last twenty-five years, radical changes in the surgical treatment of cervical nodes has taken place

In 1895, Butlin [1] began a complete dissection of the anterior triangle on the affected side in every case of intra-oral carcinoma as a routine procedure This was followed and amplified by others Within a few years, the procedure was extended by many operators to both anterior triangles, as a routine The work of Crile [2] in this country setting forth the principle of removing *en bloc* all lymphatic tissues of the neck has remained the standard about which various modifications have been made

The work of Sir George Lenthal Cheatle,[1] in which he demonstrated the invasion by malignant cells of the deeper lingual muscles in tongue cancer, brought from him the suggestion of a wider excision of the primary growth This was coupled with the block dissection idea and soon a complete removal of the primary lesion and lymphatic structures in one piece was advocated Morestin [3] favored this, but confined his neck dissection for the most part to the side of the neck on which the lesion was situated He did, however, advise a removal of all structures that could be sacrificed adjacent to the lymphatic chains of the anterior triangle Butlin was in favor of Cheatle's plan for wide excision plus block dissection, in the more advanced cases, but admitted that his own statistics did not bear out this opinion He also advocated the doing of the neck dissection before the appearance of definitely involved nodes and stated that his results were improved thereby In his report, however, he cited the cases of eight patients operated on after nodes had appeared, with three successes—and seventy patients operated on before nodes appeared, with twenty-four successes This does not indicate a benefit from performing an early dissection Many operators performed a two-stage operation, removing first the primary lesion and second the gland-bearing area, to avoid infection and the higher mortality incident to a single operation Crile [2] favored this method Others insisted on a complete removal in one stage Warren [4] was very emphatic on this point because of his belief in extension of the disease by direct permeation of lymphatic channels In a recent excellent analysis of the cervical lymphatics, with particular reference to carcinoma of the tongue, Jamieson and Dobson [5] have pointed out the multiple channels of dissemination Based on this,

Fig 1—Heavily filtered pack and tray used for external radiation of neck

they consider the block dissection of Crile inadequate in dealing with most tongue lesions In this particular type of intra-oral carcinoma, their plan may be briefly summarized thus Early lesions of the lateral border of the tongue require a complete unilateral block dissection with intrabuccal excision of the primary growth Early lesions of the tip, frenum or dorsum of the tongue require bilateral dissection with intrabuccal excision of the primary growth In more advanced lesions in any of these locations and in all lesions of the back of the tongue they advise a bilateral block dissection with extrabuccal excision of the primary lesion They note that the latter operation is impossible at one sitting highly dangerous at two and only to be done with any degree of safety at three sittings also that it is difficult to induce patients to submit to a three-stage operation Their technic of block dissection entails briefly a complete removal of the sterno-

* Read before the Section on Surgery, General and Abdominal at the Seventy Second Annual Session of the American Medical Association Boston June 1921

1 Butlin H T Results of Operations for Carcinoma of the Tongue Brit M J 1 462 (Jan) 1909

2 Crile G W and Lower W E Anoci Association Philadelphia W B Saunders Company 1914 Cancer of the Tongue pp 187 89

3 Morestin H La cure radicale du cancer de la langu J de chir 15 221 252 (Sept) 1919

4 Warren J C Cancer of the Mouth and Tongue Cong de la Soc internat de chir 2 17 46 1908

5 Jamieson J K and Dobson J F The Lymphatics of the Tongue with Particular Reference to the Removal of Lymphatic Glands in Cancer of the Tongue Brit J Surg 8 80 87, 1920

mastoid muscle, internal and external jugular veins, a considerable area of deep fascia of the neck and all the groups of lymphatic glands—lower and upper deep cervical, submaxillary and submental In the bilateral operation the internal jugular vein is left on one side

Such, then, is very briefly, the trend of surgical experience in dealing with the cervical metastases of this group of carcinomas What have been the results?

The very fact that the principle of more radical neck surgery has received almost universal approval in surgical circles is proof enough of its superiority over the older methods Definite comparative statistics on this point by the same operator are scarce Andrews [6] quotes Crile as stating that the older methods gave 29 per cent of patients well after three years, while his new technic gave 52 per cent well after three years The present surgical position has been forced by the fact that the death rate from intra-oral cancer was increased, once the disease became firmly established in the cervical nodes In an effort to circumvent this then, the only thought has been to remove as many glands as possible as early in the course of the disease as possible

There are other considerations, however, which we must bear in mind All patients suffering from intra-oral cancer, even though the lesion may be early, are not physically able to withstand such an operation In some groups of cases, the operative mortality is comparatively low while in others it is higher In following his radical technic with tongue cancer, Morestin [3] had an operative mortality of from 20 to 25 per cent In another analysis of tongue work, Meller found that the radical procedure prolonged life thirteen and four-tenths months, cured 14 6 per cent, and had an operative mortality of 13 per cent Apart from the operative mortality, we must consider the subsequent course of the failures from radical operation—very often their condition is rendered worse rather than better It is true that the ordeal of such a radical procedure is but a small sacrifice if it gives a fair hope for recovery, but as long as we are forced to offer it to the public as the only hope for a gambling chance the average layman will avoid it until his best chance is lost

It would be very interesting and instructive to know what percentage of glands removed in the routine block dissection are actually invaded by malignant cells Many observers have assumed that nearly all are, but no one has demonstrated it Practically all reports on the results of radical neck dissections fail to state the percentage of glands found involved by microscopic examination

Bloodgood [7] has contributed strong evidence in favor of an early block dissection In twenty-one lip cases showing no demonstrable involvement of nodes at the time of their removal, twenty patients remained well for five years Of his patients with glandular involvement only 50 per cent were still well at the end of this period In a series of 516 lip cases in which operation was performed, and which were reported by Broders,[8] neck dissections were performed in 449, or 87 per cent, and metastases found in 105, or 23 38 per cent In other words, 344 patients or 76 6 per cent—at least nearly that number, allowing for some failure to demonstrate existent metastases—were operated on unnecessarily Lip cancer is undoubtedly the most favorable of the intra-oral group for surgical treatment, and the average results show about 70 per cent of the patients well five years after the complete operation The tongue, on the other hand, is probably the most difficult to deal with In a series of 802 cases collected by Bastianelli [9] 584 were followed, and of these 11 6 per cent were free from recurrence after three years He did not find a single patient with cancer of the base of the tongue well after three years, even though a radical bilateral operation on the neck had been performed

It would seem, therefore, that if a blanket rule for block dissection of the neck is to be applied to every case that can stand it or will permit it, an appalling number of unnecessary operations must be undertaken many of them offering but a poor chance for the patient at that

Would it not be better to attempt to ascertain whether the death rate would be increased by separating those cases in which metastases are most liable to occur from those in which they probably will not occur? Epidermoid carcinoma presents two distinct types the superficial papillary and the deeply infiltrating The former is much less liable to extend to the nodes until very late in the course of the disease The disease in different locations varies in its capacity for early involvement of the nodes Carcinoma of the tongue and tonsil extends to the regional nodes much earlier than that of the mucosa of the cheek or lip. While the age of the patient is not an infallible guide, it is, nevertheless, a strong predisposing factor The hygiene of the buccal cavity itself is undoubtedly of more importance than is generally recognized With the oral cavity kept under the best hygienic conditions, it has been our experience that extension to the cervical nodes is relatively less frequent than when no attention is given to proper cleansing Ewing [10] has pointed out that changes in the lymph nodes draining malignant tumors show that the implantation of metastases is preceded by a period of preparation of the soil, the nodes show evidence of septic and toxic absorption for a considerable period

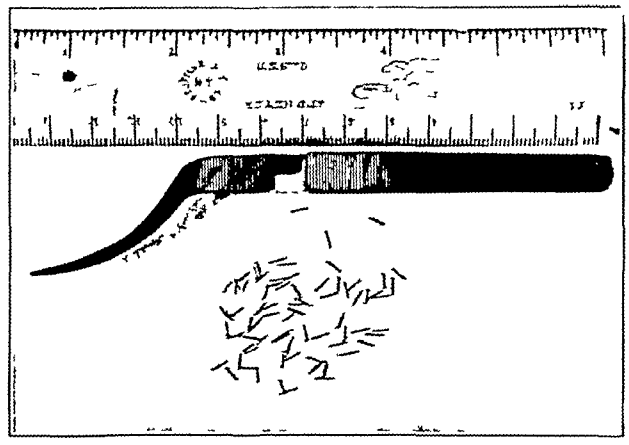

Fig 2—Radium emanation tubes used for burying in tissues at time of operation

6 Andrew E W Keen s Surgery 3 330 1914
7 Bloodgood J C Cancer of the Lower Lip Boston M & S J 170 49 1914
8 Broders A C Squamous Cell Epithelioma of the Lip A Study of 537 Cases J A M A 74 656 64 (March 6) 1920
9 Bastianelli M R Discussion—De la resection du maxilliare inferieur dans les cancers de la bouche—Vallas (Lyon) Cong de la Soc internat de chir 1 80 1908
10 Ewing J Neoplastic Diseases Philadelphia W B Saunders Company 1919 p 824 and pp 76 84

After classifying our cases in this manner, would it not be possible to ascertain, in a large percentage of the cases at least, whether the death rate would be increased by following an expectant plan of treatment and reserving our surgery until a definite node is palpable? By intelligent cooperation on the part of the patient, it is possible to palpate an involved node in the average neck before its capsule has been perforated In this stage, the node performs a conservative function and represents one of Nature's strongest barriers to dissemination of the disease Ewing [10] has noted that embolic cancer cells may be destroyed in the nodes

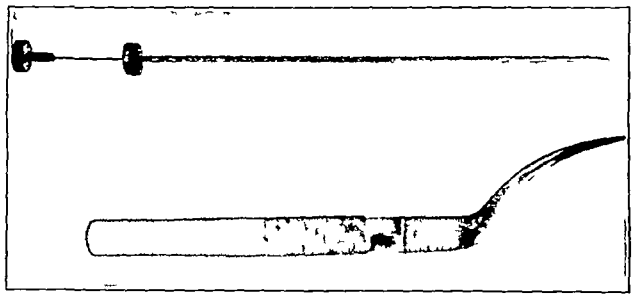

Fig 3—Trocar needle used for inserting radium emanation tubes in tissues

under some circumstances but that for the most part the nodes appear to retain and retard growth rather than destroy these cells Evidence of retardation of growth in the nodes by fibrosis and encapsulation are common In this early stage of palpable involvement, the node demonstrates the direction the metastasizing is taking through the lymphatic channels and holds the disease in check until it can be intelligently dealt with It has been my experience that a dissection at this time reveals usually only one or two nodes involved It is rare that a chain of nodes is found involved throughout until late in the disease This appears to be true of all cervical metastases of intra-oral carcinoma It is one of the chief clinical differences between the metastasizing properties of epidermoid carcinoma and glandular types of carcinoma such as that of the breast

The mode of dissemination itself is a factor in favor of conservatism I believe we are now fairly well agreed that cancer cells metastasize by embolism and not by direct extension along the walls of the lymphatics Ewing [10] favors this theory and suggests that Handley's idea may be due to the lodging of cell emboli within the lymphatic channels with growth in either direction from these Jamieson and Dobson [5] believe that extension within the tongue is by permeation of lymphatics, but that extension to the nodes is by embolism Ryall [11] states that the situation of the primary lesion does not indicate either the chain of nodes or the side on which metastatic involvement may appear In Broders' large series of lip cases, not a single patient with involvement of more than one group of lymphatics recovered

It would seem, therefore, that the adoption of a radical block dissection as a blanket rule is a frantic, rather than a scientific, effort, borne out by the natural history of the disease, toward preventing its extension

To add to our argument in favor of the conservative treatment of the nodes from a surgical standpoint we have now the aid of the physical agents During the last few years, rapid progress has been made in the use of the roentgen ray and radium from the therapeutic standpoint We have, therefore, felt disposed to take advantage of these agents and use them in conjunction with surgery where this combination seems justifiable

In our work at the Memorial Hospital, we have used radium almost exclusively in our neck work, although more recently we are doing more external radiation, and for this purpose we are utilizing the roentgen ray to a greater extent than previously During the last year, we have endeavored to radiate all necks externally as soon as possible after admission to the service For the more favorable cases, we have used radium, for the remainder, the roentgen ray, and in some, a combination of the two agents

In those cases having no palpable nodes, this has been done for the purpose of stimulating the protective defenses in the lymphatics and destroying minute metastatic foci at a time when they are of least proportions Radiation tends to block lymphatic channels through its effect on the endothelial cells, and on the gland itself the effect is to produce a marked cellular reaction There is an exudation of lymphocytes and plasma cells, production of connective tissue is stimulated and this tends to incarcerate vagrant cancer cells Thus, the natural barriers to cancer dissemination are strengthened rather than removed From external radiation alone, however, we do not believe that we have ever been able to destroy, completely, fully developed epidermoid carcinoma in the cervical nodes

In cases in which nodes are already palpable, external radiation, by reason of the effects previously mentioned, inhibits the progress of the disease and renders it, at least temporarily, less malignant, and therefore a safer operative risk A considerable series of nodes studied microscopically suggests that this result has been accomplished

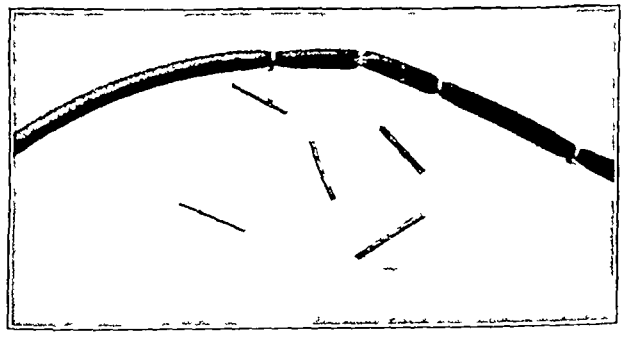

Fig 4—Rubber tubing containing filtered radium tubes used in neck wound This is not so effective as buried emanation

In all cases with operable nodes on admission, or which develop nodes following treatment of the primary lesion with radium, a neck dissection is undertaken, following external radiation, as soon as the maximum of inflammatory reaction from treatment of the primary growth has subsided We feel that, as a general rule, all such dissections should be unilateral and complete Cancer, however, is a disease in which each case must be considered individually and consequently various modifications of the operation must be made These cannot usually be determined until the deeper structures of the neck are exposed

11 Ryall C Cancer of the Tongue Brit M J 1 697 99 (April 5) 1913

In all cases radium emanation is embedded in the operative field following removal of the lymphatic structures For this purpose small, fine glass capillary tubes, 0 3 by 3 mm in size, are prepared, containing from 0 5 to 1 mc of radium emanation These are embedded at all suspicious points in the wound, especially where the

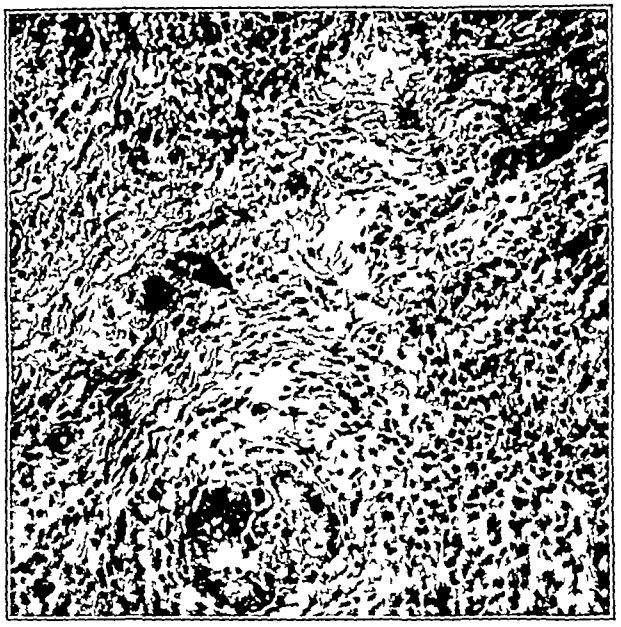

Fig 5 —Section of node radiated externally before surgical removal

lymphatic channels are severed Since radium emanation decreases in value at the rate of approximately 15 per cent per day, it will be seen that a certain amount necessary for the dosage decided on can be buried in the wound and left in situ We have never had trouble from the minute glass tubes they readily become encapsulated in a small connective tissue capsule excited by the inflammatory effects of the radiation One mc of radium emanation affords a total radiation equivalent to approximately 132 mc hours from the time of its introduction until it is entirely exhausted Since this requires several weeks, it will be seen that a very prolonged and continuous radiation is made possible, and the fact that the active radiation extends over weeks permits of heavier dosage The inflammatory effects of radiation are not apparent for several days and therefore have no detrimental effect on the healing of the wound By burying the emanation directly in the wound, a uniform distribution is obtained and radiation may be concentrated at suspicious points Usually a dosage of 5 to 15 mc is distributed throughout the operative field, concentrated for the most part at the points of severance of lymphatic channels This gives a total radiation of from 600 to 2,000 mc hours of unfiltered rays We feel that the utilization of beta as well as gamma rays by this method is a very distinct advantage because of the intense local effect of the beta radiation We feel also that use of the radium in this manner is distinctly superior to the use of filtered radium encased in rubber tubes and placed in the wound as a drainage tube might be placed This method fails to concentrate the radiation at points where it is most needed

The use of external radiation following operation is advantageous in some cases, especially over the opposite side of the neck However, where intense radiation has been used within the wound it does not seem that much is to be gained by further external radiation It is quite possible to devitalize the tissues by overdoing the use of the physical agents

As for the operation itself, our procedure has been this Local anesthesia of 1 per cent procain, using a combination of the infiltration method for the skin incision and conduction for the deeper structures, is employed A preliminary hypodermic of ⅙ to ¼ grain of morphin is advantageous in some cases, but by no means necessary in all A skin incision is made from over the base of the styloid process and 1 5 cm posterior to the angle of the jaw, downward over the anterior border of the sternomastoid muscle to the episternal notch This incision is bisected by a second, beginning at the tip of the chin The skin and superficial muscle is laid well back The next step depends on the individual case If the sternomastoid muscle can be satisfactorily retracted it is left in place, otherwise it is divided below and turned upward with the fat tissue and lymphatic structures The posterior belly of the mylohyoid muscle can usually be satisfactorily retracted The internal jugular vein is not removed unless a node seems firmly attached to it Under such circumstances, no hesitancy is felt in removing it The upper cervical chain of lymphatics is separated as close to the parotid as possible, and, if necessary, a portion of that gland is also removed The submaxillary gland is removed with its surrounding lymphatic plexus and the adjacent submental nodes Only in cases in which a definitely involved node lies suspiciously near to muscles is a portion of the muscle fascia excised In all cases in which the primary lesion remains ulcerated

Fig 6 —Effects of heavy external radiation before removal

at the time of operation the external carotid artery is ligated, and to further cut off anastomotic circulation the branches supplying the region of the primary growth are also ligated separately As Kuster [12] has pointed out, ligation of the external carotid as a routine

12 Kuster Treatment of Carcinoma of the Tongue and Ligature of the External Carotid Artery Arch f klin Chir 81 1 1906

procedure is perfectly safe I should like to note, however, that ligation should always be done above the superior thyroid branch to avoid nutritional disturbances through interference with thyroid function After insertion of the radium emanation tubes, as previously outlined, the wound is closed in the usual

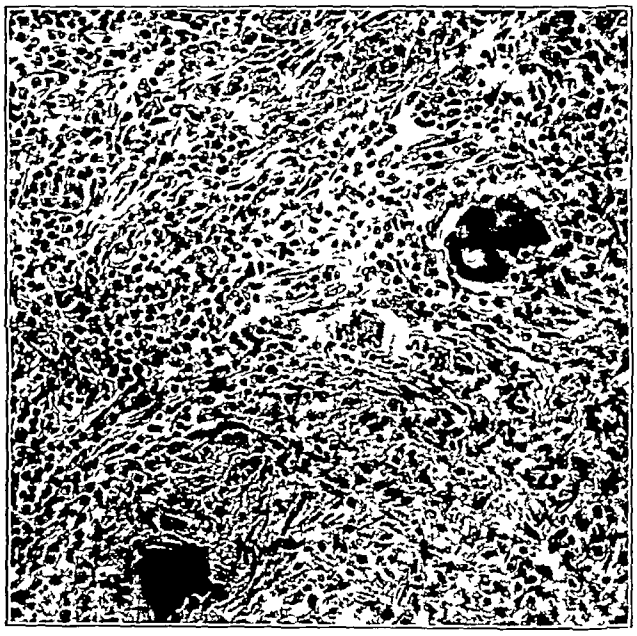

Fig 7 —Fibrosis and cellular destruction due to external radiation

manner and drainage provided for the first twenty-four hours after operation

In certain cases, I believe that various modifications of this routine method may be made to advantage In many elderly patients with primary lesion healed or well under control the dissection may be confined to the submaxillary and submental groups through a submaxillary incision or to the upper and lower deep cervical groups through a sternomastoid incision In either case, radium is used as before and the procedure in no way interferes with a subsequent dissection of the other group in the event of that becoming necessary

In all cases in which the disease has perforated the gland capsule and is infiltrating widely, I believe that it is unwise to attempt a radical surgical removal Radium emanation in sufficient dosage is distributed uniformly throughout the mass and at other strategic points and the wound closed The mass affords an excellent means of retaining the radium in place and thus permits of very heavy radiation of all surrounding parts In this instance, surgery is employed for exposure and accurate localization only We now have a small group of cases in which all palpable evidence of the disease has disappeared following treatment in this manner It is the only way in which we have been able to destroy, completely, well-established epidermoid carcinoma in the cervical nodes

I should like to emphasize the performing of neck surgery under local anesthesia The patient's head is under complete control, surgical shock is reduced to a minimum, hemorrhage is better controlled the danger of postanesthetic pneumonia is avoided, more careful work can be done, and many patients can be successfully cared for who could not stand a general anesthetic

The time factor in this plan of treatment is still short, and our statistics are therefore of little value from a comparative standpoint I do believe, however, that they are reasonably suggestive Since the two extremes of intra-oral carcinoma may be represented by tongue and lip cancer, our statistics for these may be briefly cited

Our series of carcinoma of the tongue, reported in December, 1920, for the period of three and one-half years previous, comprised a total of 148 cases Sixty-nine were primary cases without palpable involvement of the nodes, and of these, thirty-four were classed as surgically operable Of this group of thirty-four cases, twenty-nine were free from clinical evidence of disease for periods ranging from three months to three years, five cases developed nodes after treatment of the primary lesion with radium Of these, three were clinically free from disease following the combination of surgery and radium One died a year after operation with recurrences both local and regional, and the other was lost track of

Of the primary cases with definite involvement of the nodes upon admission, only three were operable These were treated with radium for the primary growth and a combination of surgery and radium for the neck All three were clinically free from disease—the longest case being of nearly three years' duration Of the recurrent cases, three were operable, all local recurrences, and of these, two were well for periods of one and one-fourth years and one and three-quarter years without development of nodes to that time, while the third case was lost track of

Of the total series neck dissections following the plan described, were performed in fifty-eight cases

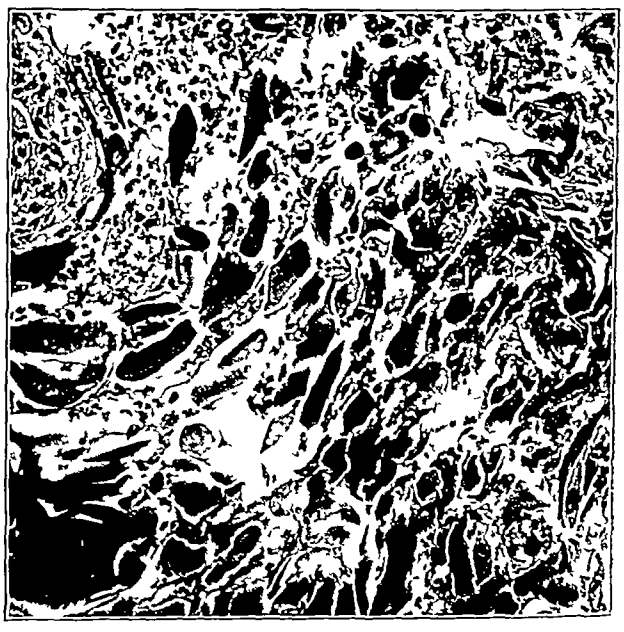

Fig 8 —A later stage of case shown in Figure 7 demonstrating marked destructive changes within the node

Of these, recurrences appeared in fifteen, or 25 8 per cent In cases developing nodes after treatment of the primary growth with radium the average period between this treatment and the appearance of the node was four months the extremes being six weeks and twelve months

To the time factor of this group of cases another six months may now be added since all of the patients reported clinically free from disease at that time have remained so with the exception of one in whom a recurrence has followed the neck operation A second operation has recently been performed in this case

Fig 9—Replacement by fibrous tissue following the burying of radium emanation within the malignant node

Our series of lip carcinomas for the last four and a half years comprises 162 cases Ninety-two were primary without demonstrable involvement of the nodes eleven were primary with nodes, and fifty-nine were recurrent Of this total group, 115 cases have been traced to date Eighty, or 69 5 per cent, are clinically free from disease for periods ranging from four months to four years, the average period being eighteen months

Of the ninety-two patients without nodes on admission only eight are known to have developed nodes after treatment of the primary growth with radium, although it is to be supposed that certain others are present in the group of untraced cases Of these eight cases, seven are now clinically free from disease following our usual neck technic for periods ranging from four months to four years The other patient died of recurrence in the neck one year after the original operation had been performed

In all, twenty-two neck dissections were performed following the plan previously outlined Fifteen patients are now free from disease for periods ranging from four months to four years, the average being eighteen months Six patients died at periods of from four months to two years after operation, the average duration of life after operation being fourteen months One case has recently recurred and is steadily becoming worse

CONCLUSIONS

In making deductions on such a subject as this, the factors presumed, as based on our clinical experience with the combination of surgery and radium, must not be considered proved as yet The time limit is still brief and methods have changed considerably through this period of four years I believe, however, that the results to date are suggestive and very encouraging and that these results warrant our continuing our effort along the same lines

Our present opinion, therefore, may briefly be summarized as follows

1 The routine block-dissection of the neck in practically all cases of intra-oral carcinoma as generally accepted at the present time is a frantic effort without regard for sacrifices and does not recognize either the natural history of the disease or the various factors which may modify it in individual cases

2 The cervical lymphatics perform a conservative function in the early course of the disease, and to remove them by a routine early block dissection removes Nature's chief barrier to dissemination, frequently at a time when it is needed most

3 An expectant plan of treatment which recognizes the natural history of the disease and the natural factors of resistance to it is an approach toward a more scientific solution of the problem and in no way jeopardizes the best interests of the individual case

4 The physical agents have demonstrated their worth as valuable factors in the treatment of this disease and should be used in every case, unless hopelessly advanced

5 A combination of surgery and radium offers more than surgery alone, once the indication for operative intervention has arisen

6 The use of local anesthesia is preferable in all surgery of the cervical lymphatics

7 A conservative plan of treatment gives promise of reducing practically to a minimum the present immediate operative mortality, of saving patients an appalling number of unnecessary operations, and of saving considerable added suffering following many of these operations This will react to relieve considerably the factors of fear and distrust on the part of the laity and bring patients into proper channels earlier in the course of their disease

Fig 10—Beginning fibrosis and cellular destruction from burying emanation interstitially

350 Park Avenue

ABSTRACT OF DISCUSSION

DR R B GREENOUGH, Boston The statistics Dr Quick gives are the strongest argument for this method of handling cases We must, however, distinguish clearly between the different types of cancer of the tongue and of the lip They are two very different diseases At the Collis P Huntington Memorial Hospital we have seen great palliative benefit from roentgen-ray and radium treatment in retarding the development of cancer in lymph nodes, but we have yet to see a case that can be called a cure brought about by external radiation In our experience, a few cases of cancer of the tongue, with extension of the disease to the regional lymph nodes, are cured by radical operation, but such cases are relatively rare, and there is a tendency, in this community at least, to restrict the radical operation to the earliest and most favorable cases The microscopic examination of a mass of lymph nodes may fail to show evidence of metastasis even though such an area may be present It is impossible to place under the microscope anything but a few sections from the more suspicious areas, so that a negative pathologic report is of little value The first small embolic foci of cancer in a lymph node may thus escape the pathologist's examination Dr Quick attributes the successful treatment of metastatic lymph nodes by roentgen ray and radium chiefly to the fibrosis thus produced, and in this opinion I agree If we incapacitate a lymph node by fibrosis, it is of no more use to the individual than if we took it out, and I cannot see why the barrier produced by operation should not be as good a barrier as is a lymph node containing cancer and surrounded by fibrosis For these reasons I am still in favor of the operative removal of the regional lymph nodes in the early and favorable cases In the more advanced cases, however I think that the method advocated by Dr Quick is to be preferred It will prolong life and make many patients more comfortable, and a certain number may obtain permanent relief

DR VILRAY P BLAIR, St Louis After a long period of observation, both before and since we have had the advantage of using radium and the roentgen ray in connection with surgery, I am convinced that one cannot make as extensive or as quick a dissection under local as under general anesthesia I heartily agree with the idea of radiation in connection with operation, but I think that when one determines the type of cancer one must also distinguish the mentality of the patient Certain patients will come back as advised, at regular intervals for further observation, others will not We all know that the majority of people with a squamous epithelioma in the mouth will probably in two years or even very much earlier have epithelioma in the neck, often with extremely rapid growth after its appearance Even in those that have been cured, the appearance of recurrent carcinoma may be delayed, this is especially true after the cure of lip cancer, in which I have seen as late as eight years afterward For these reasons I think it is just a little dangerous to have the unqualified advocacy of not dissecting the lymph nodes come from this section, even though in my own observation the vast majority of those removed were found noncancerous by the pathologist

DR JOSEPH C BLOODGOOD, Baltimore Radium and roentgen-ray treatment of spinous cell cancer of the tongue, oral cavity and lower lip is having an important bearing in a progressive attack on this type of cancer, because it is putting surgery on the defensive I am convinced that the five-year operative cure of cancer in almost every localization has been exaggerated because cases have been included in which an incorrect diagnosis of cancer has been made To correct these figures we cannot depend on written diagnoses made years ago but we should resort to a restudy of the sections and, if possible, obtain the opinion of two or more pathologists The number of cases with metastases to glands has been exaggerated by the misinterpretation of endothelial hyperplasia, which is often difficult to distinguish from metastasis My own restudies have shown that the five-year cures in early cancer of the tongue are about 62 per cent, while in late cancer they are only 12 per cent From my personal experience and a study of the literature, I can find no evidence that roentgen ray or radium alone can compete with surgery It is yet to be demonstrated whether roentgen ray and radium in conjunction with surgery can improve these results I am inclined to believe that the greatest improvement in the number of deaths from cancer rests more on the education of the public on the importance of presenting themselves when they first see or feel the initial lesion

Radium and roentgen rays should be employed with the greatest caution for cancer in every localization in its early stage where immediate and proper surgery has accomplished excellent results, and this is true of the early stage of cancer of the lip, tongue, floor of the mouth and oral cavity

DR DOUGLAS QUICK, New York The surgeons who are unwilling to forego a routine block dissection would be doing a great favor to humanity if they would have a careful microscopic examination of these nodes made in every case, not a perfunctory affair, but a real examination of all the nodes We do not know, of course, how many show involvement Only occasional reports appear here and there I feel strongly in regard to local anesthesia The patient's head is under control, bleeding is less, you can take your time and this is one of the jobs in surgery in which speed is not the most important factor In our own clinic we have had no difficulty in doing as extensive a procedure as we liked The sternocleidomastoid, internal jugular, and the lymphatics of both anterior and posterior triangles can be removed without trouble The elimination of congestion from general anesthesia cuts down materially the amount of hemorrhage, and if we accept Gaylord's work of several years ago on the lowering of the resistence to cancer by hemorrhage, I think it is a very real factor In regard to eliminating nodes, I want to make clear what Dr Greenough mentioned, which I stated in the paper as well, that by external irradiation alone we have been unable to clear up, entirely, epidermoid carcinoma in the cervical nodes

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GASTROJEJUNAL AND JEJUNAL ULCERS

REPORT OF TWENTY-ONE CASES *

RICHARD LEWISOHN, M D

Attending Surgeon Beth Israel Hospital Associate Surgeon Mount Sinai Hospital

NEW YORK

Gastro-enterostomy has been considered, until a few years ago, by the large majority of surgeons as the operation of choice for the radical treatment of pyloric and duodenal ulcers However, the results obtained by this operative procedure have not been such as to justify the high hopes that were entertained by surgeons for it

There is no doubt that about 75 per cent of all pyloric and duodenal ulcers are permanently cured by gastro-enterostomy This is verified by the statistics of the large surgical clinics

The object of this paper is to deal with one of the causes of failure to effect a radical cure by gastro-enterostomy, namely, gastrojejunal [1] and ejunal ulcer

Gastrojejunal and jejunal ulcers occur in about 4 per cent of gastro-enterostomies

Numerous theories have been advanced as to the causation of these ulcers Many authors have assumed that nonabsorbable suture material (Pagenstecher's linen thread) was one of the most frequent causes for

* From the Wimpfheimer Division for Gastro Enterological Surgery (Service of Dr A A Berg) Mount Sinai Hospital

* Read before the Section on Surgery General and Abdominal at the Seventy Second Annual Session of the American Medical Association Boston June 1921

* Because of lack of space this article is abbreviated here by the omission of case reports and tabular matter The complete article appears in the Transactions of the Section and in the author's reprints.

1 The term marginal ulcer which is often applied to these ulcers, is nondescriptive and should not be used

the formation of these ulcers Eusterman[2] reports from the Mayo Clinic that in one third of eighty-three gastrojejunal ulcers, retained suture material was a highly probable causative factor Our statistics do not warrant the same conclusion In none of our patients suffering from gastrojejunal or jejunal ulcers were remnants of suture material found, though linen thread had been used for the outer layer in every case Though nonabsorbed suture material may be found in reopening a gastro-enterostomy stoma, the proof is missing that these retained sutures really cause the formation of these ulcers

Most surgeons, following the advice of the Mayos, have, during the last few years, abandoned entirely the use of nonabsorbable suture material in gastro-enterostomies In our clinic, we have partly discontinued the use of nonabsorbable suture material for the last year and a half It will be interesting to observe whether the use of catgut for both layers in gastro-enterostomies will reduce materially the number of gastrojejunal ulcers

The traumatism caused by clamps, etc, has been considered as a factor in the production of these ulcers However it is not our opinion that this causative factor is of great moment Of course, it is very obvious that gastro-enterostomy ought to be performed with as little traumatism as possible, and specially prepared sutures should be used, as they injure the tissue much less than the ordinary needle and thread

The question of the causation of gastrojejunal ulcers will be solved, when the true cause of gastric and duodenal ulcers is definitely established Rosenow[3] asserts that gastric ulcers are manifestations of a hematogenous infection with streptococci Reeves[4] has published interesting anatomic studies, showing the close relation of ulcers to arterial vessels which branch off from the main gastric arteries and pierce through the wall of the stomach

There can be no doubt that the direct introduction of acid gastric juice without the mixture of the different ferments which the food obtains normally on its way through the duodenum is a very important factor in the causation of gastrojejunal ulcers However, there must be other factors as cases of gastrojejunal ulcer with hypo-acidity have been reported Case 13, for instance had a marked hypo-acidity, though the patient was suffering not only from a gastrojejunal ulcer, but simultaneously from a penetrating ulcer of the lesser curvature

It would carry us too far to report in detail the attempts that have been made to reproduce gastrojejunal ulcers experimentally All these experiments have failed to produce permanent ulcers of the human type They lack the permanency, the extreme chronicity of the human ulcer In other words, they are not true reproductions of the condition under discussion

Wright,[5] in 1918, collected 145 cases, including his own, from the literature The types of preliminary operation performed in these cases were these anterior gastro-enterostomy, 38, anterior gastro-enterostomy and entero-anastomosis, 26, anterior gastro-enterostomy en Y, 10, posterior gastro-enterostomy, 54, posterior gastro-enterostomy, with entero-anastomosis, 3, posterior gastro-enterostomy en Y, 5, and not stated, 9 It is evident from this list that all methods of establishing a direct communication between the stomach and the jejunum are likely to be followed by gastrojejunal or jejunal ulcers

Wright states that the percentage of gastrojejunal ulcers following anterior gastro-enterostomy is higher than that following the posterior gastro-enterostomy

The diagnosis of gastrojejunal ulcers is comparatively easy to make

For about four or six months following the gastro-enterostomy, the patients feel perfectly well Then they begin to notice a recurrence of their gastric distress The pain is slight in the beginning, but gradually increases in intensity Frequently, the pain is very severe, much more so than in pyloric or in duodenal ulcer In some instances, the patients even threaten to commit suicide The immediate and complete relief which these patients experience following the excision of the gastrojejunal or jejunal ulcer is one of the most gratifying results in abdominal surgery

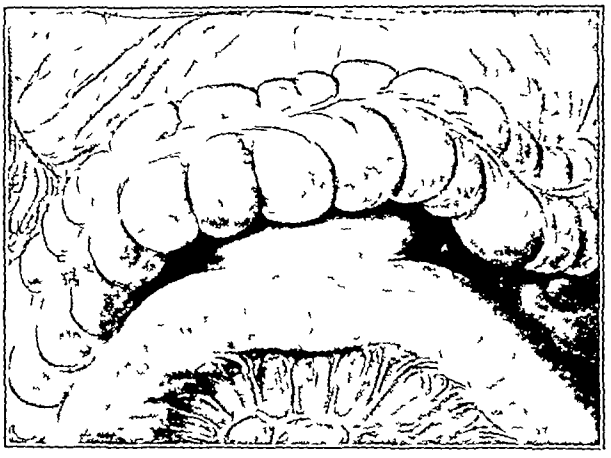

Fig 1 (Case 21) —Large gastrojejunal ulcer

Constipation is recorded in the majority of cases Careful examination of the stools may show evidence of blood Some patients vomit occasionally

Physical examination does not yield many symptoms except local tenderness, usually in the left upper abdomen and the lumbar region

Roentgen-ray examination, which is of such great value in the diagnosis of pyloric and duodenal ulcer, is equally important in the diagnosis of gastrojejunal or jejunal ulcer Thus in our own cases, our roentgenographers (Dr Jaches and Dr Goldfarb) made the correct diagnosis in sixteen out of a total of eighteen patients They failed to make the diagnosis in only two cases in which operation subsequently established the presence of a gastrojejunal ulcer A correct diagnosis was thus made from the roentgen-ray findings in 88 per cent of the cases

The roentgen-ray diagnosis is based mainly on the following findings Irregularity of the stoma, tenderness of the stoma on pressure during flouroscopy, hyperistalsis diminished patency of the stoma and residue of the test meal in the stomach after three and

2 Eusterman G B Gastrojejunal Ulcers Minnesota Med 3 517 (Nov) 1920

3 Rosenow Production of Ulcer of the Stomach by Injection of Streptococci J A M A 61 1947 (Nov 29) 1913

4 Reeves T B A Study of the Arteries Supplying the Stomach and Duodenum and Their Relation to Ulcer Surg Gynec & Obst 30 374 (April) 1920

5 Wright Secondary Jejunal and Gastrojejunal Ulcerations Brit J Surg 6 590 1918

six hours Residue, however is not necessary to establish the diagnosis of gastrojejunal ulcer In Cases 15 and 17 no residue was present And yet the patients suffered from a typical gastrojejunal ulcer

It can be safely stated that the diagnosis of gastrojejunal ulcer is not a very difficult one Occasionally

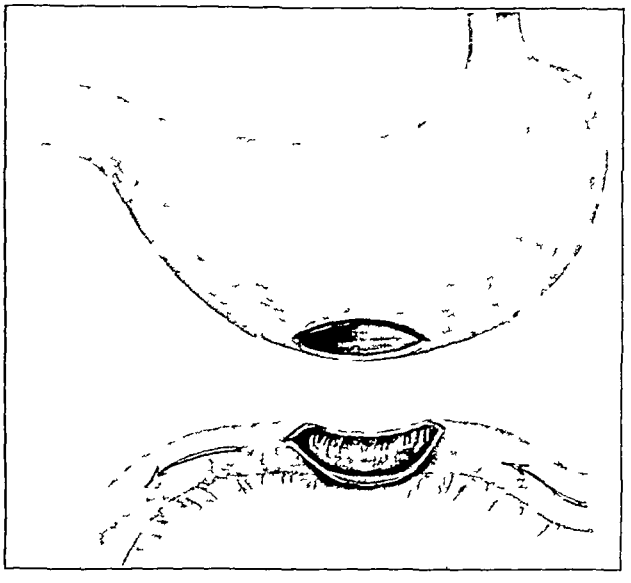

Fig 2 (Case 21) —Defect in stomach and jejunum after excision of gastrojejunal ulcer

a gastrojejunal or jejunal ulcer will be suspected whereas the exploratory laparotomy only shows postoperative adhesions as the cause of recurrent gastric symptoms

The twenty-one operations, performed on eighteen patients (in Case 2 there were two operations and in Case 6, three operations) show the location of the ulcer as follows fifteen gastrojejunal ulcers, two recurrent gastrojejunal ulcers, one perforated gastrojejunal ulcer, two jejunal ulcers, and one perforated jejunal ulcer

In five cases, the original operation (gastro-enterostomy) was performed in other hospitals

The frequency of gastrojejunal ulcers as compared with jejunal ulcers is very evident from this list The preponderance of gastrojejunal ulcers is well known and has been mentioned by practically all authors

Seventeen patients were male and only one patient (Case 13) was female This coincides with the preponderance of the male sex in cases of ulcer of the stomach and duodenum

If it should be assumed that there is a relationship between traumatism and the formation of gastrojejunal ulcers, it must be stated that this connection can hardly account for the jejunal ulcers, which occur a considerable distance away from the stoma, usually in the efferent loop

Bryan [6] has published a case of primary perforated jejunal ulcer without previous gastro-enterostomy He mentions three other cases of this type, published by Van Roojen [7]

The operative procedure depends entirely on the situation of the ulcer It must be our object to deal radically with the ulcer whenever possible, without endangering the life of the patient

It is, indeed, fortunate that a large number of gastrojejunal ulcers are situated on the anterior wall of the stoma This location lends itself to a rather conservative procedure The ulcer is excised locally the posterior suture line of the gastro-enterostomy is preserved, the narrowed stoma is widened by enlarging the opening in the stomach and jejunum, respectively, and the anterior wall of the stoma is resutured

This comparatively simple procedure was employed in more than 40 per cent of our cases All these patients made an uneventful recovery In one case (Case 8) the transverse colon was so densely adherent to the ulcer, that it was opened during the process of freeing it from the ulcer The opening was immediately closed This little accident did not interfere with the operative result In another case (Case 12), the adhesions to the mesocolic vessels were so dense that an excision was inadvisable In this case, the stoma was opened, the base of the ulcer was cauterized and circumcised and the intact mucosa of stomach and jejunum was sutured over it

A somewhat different procedure was employed in Case 21 The defect in the jejunum was of considerable size after excision of the gastrojejunal ulcer

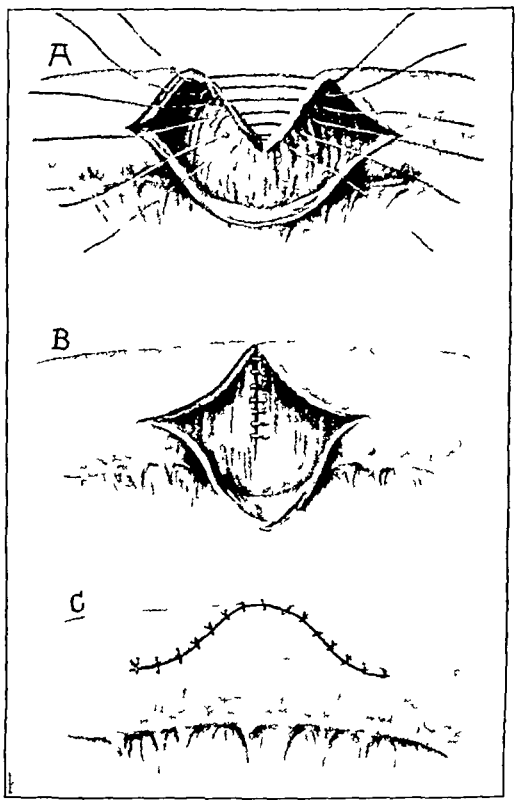

Fig 3 (Case 21) —Closure of jejunal defect *A* and *B* posterior wall *C* anterior wall

The opening in the jejunum was closed, and the opening in the stomach united with another part of the jejunum, a few inches away from the former connection (Figs 1, 2, 3 and 4)

Of great technical interest is Case 13, in which it was feasible to include the gastrojejunal ulcer in the resected part of the stomach, the resection being indi-

6 Bryan R C Ulcer of the Jejunum Surg Gynec & Obst **22** 279 (March) 1916

7 Van Roojen Ueber das Ulcus pepticum jejuni nach Gastroenterostomie Arch f klin Chir **101** 381 1909

cated on account of a penetrating ulcer in the lesser curvature of the stomach Most of the stoma was thus preserved

In two cases (gastrojejunal ulcer [Case 2] and perforated jejunal ulcer [Case 4]), the Roux operation was performed As seen above, the Roux operation

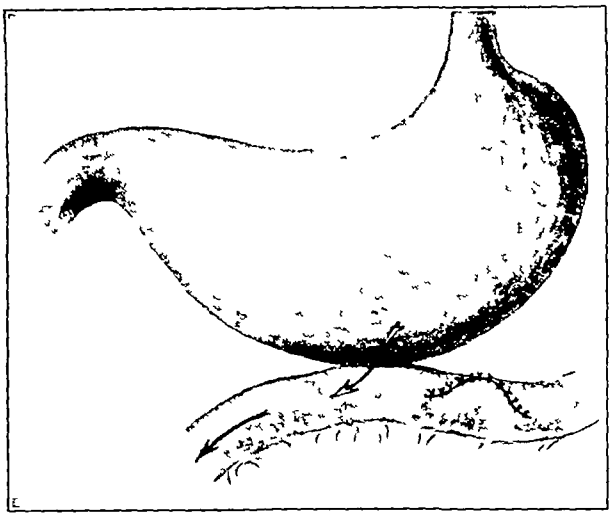

Fig 4 (Case 21) —New gastro enterostomy and jejunal defect closed

is followed by a large percentage of recurrences, as the jejunum, attached directly to the stomach, receives the pure gastric juice without any pancreatic ferments Furthermore, the technical difficulties are very large, as the upper end of the jejunum is very short on account of the previous no loop gastro-enterostomy Both of these patients died One patient (Case 4) succumbed immediately after the operation, another (Case 2) died subsequently from a carcinoma at the site of the new gastro-enterostomy, probably implanted on a recurrent gastrojejunal ulcer

In three cases (9, 16 and 19) the ulcer was of such large size and so densely adherent to the mesocolic vessels that excision seemed inadvisable As these patients had narrowing of the stoma, a new gastro-enterostomy was performed I had occasion (in Case 9) to inspect subsequently the effect of this procedure on the original gastrojejunal ulcer This patient required a third operation for suspected recurrent gastrojejunal ulcer The operation revealed a jejunal ulcer, densely adherent to the abdominal wall (see below) Exploratory opening of the stomach revealed that the original gastrojejunal ulcer had entirely disappeared, following the second gastro-enterostomy

Another patient (Case 18) is perfectly well since the second gastro-enterostomy Another (Case 19) was suffering from a perforated gastrojejunal ulcer with peritonitis The stoma was narrowed after closure of the perforation to such a degree that a second gastro-enterostomy was performed I have seen this patient lately He has a large atonic stomach There is no residue after three hours He will require medical treatment (lavage, etc) in order to reestablish the tonicity of his gastric musculature

In three cases (7, 14 and 17) a jejunostomy was added to the local excision of the gastrojejunal ulcer This combination of local excision and jejunostomy not only safeguards the suture line but enables us to feed the emaciated patients properly immediately after the operation The tube is removed after two weeks Simple jejunostomy was employed in two cases (10 and 11) with the object of sidetracking and thus curing the ulcer The ulcer was so large and so densely adherent to the colon and mesocolon, that radical procedure was inadvisable The first patient died following the jejunostomy from leakage

The effect of a jejunostomy on a gastrojejunal ulcer could be studied in Case 11 This patient was reoperated on eight months later for suspected recurrent gastrojejunal ulcer The symptoms were caused by extensive adhesions The gastrojejunal ulcer had entirely disappeared, following simple jejunostomy He has been perfectly well since his last operation two years ago

It is evident from this survey that we have tried to be as conservative as possible in our cases of gastrojejunal ulcer Some surgeons have taken a much more radical standpoint in dealing with these ulcers For instance, Clairmont [8] has reported three cases of gastrojejunal ulcers, combined with a colonic fistula in which he performed partial gastrectomy and resection of the colon The operations lasted seven, six and five hours, respectively Though the patients recovered, the risks of such very extensive operations cannot be underestimated

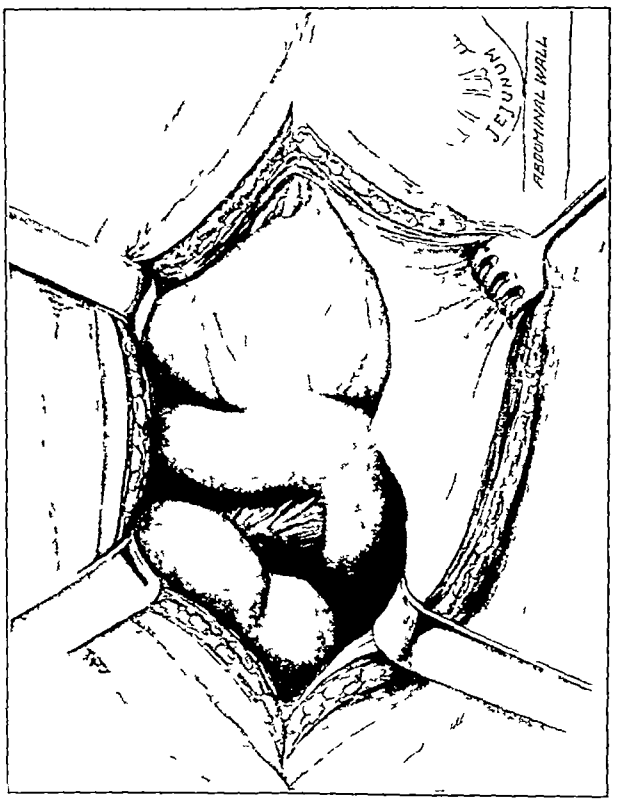

Fig 5 (Case 20) —Jejunal ulcer adherent to abdominal wall

The jejunal ulcers are much easier dealt with than the gastrojejunal ulcers Simple excision and closure of the defect in layer suture is all that is required This procedure was employed in our cases of jejunal ulcers (18 and 20) The operative procedure employed in Case 20 is illustrated in Figures 5, 6 and 7 The

8 Clairmont Die Operation der Magen Kolon Fistel nach Gastroenterostomie Munch med Wchn chr 65 1067 1918

ulcer was densely adherent to the left abdominal wall which explained the terrific left-sided pains from which this patient suffered This case is of unusual interest He had, in the course of five years, four operations for (1) duodenal ulcer, (2) gastrojejunal ulcer (excision), (3) recurrent gastrojejunal ulcer (second gastro-enterostomy) and (4) jejunal ulcer (excision)

In Case 18 the base of the ulcer was adherent to the transverse colon The ulcer was circumcised, its base left intact on the colon and the jejunal defect was closed The patient has been free from symptoms since his last operation

The operative mortality was small Twenty-one operations were performed with two operative deaths (less than 10 per cent)

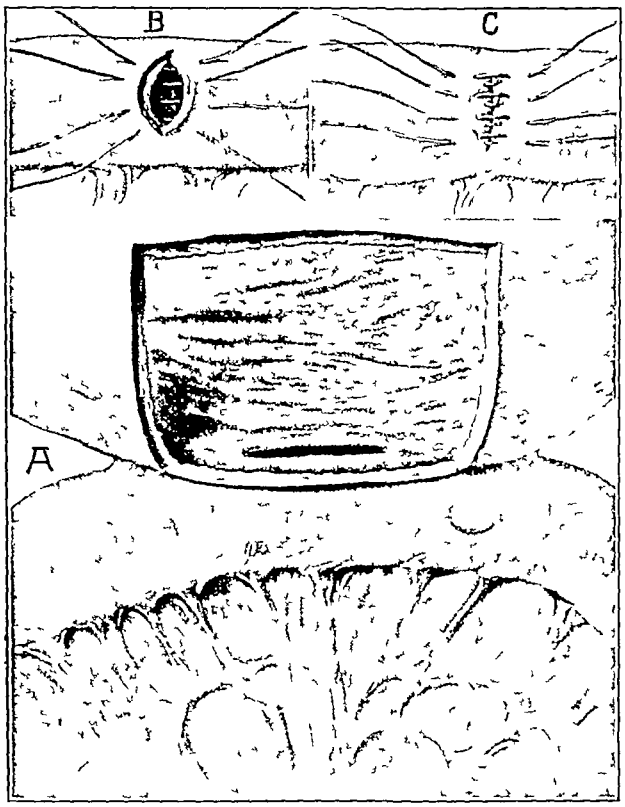

Fig 6 (Case 20)—*A* ulcer freed from abdominal wall *B* and *C* closure of defect

It is very gratifying to record that the final results of surgical treatment of gastrojejunal and jejunal ulcers have been most satisfactory As seen in Table 3, ten patients (83 per cent) were cured Two patients (Cases 15 and 19) are very much improved, though not perfectly cured The ten patients are perfectly free from any gastric distress, though they do not keep any diet They have gained in weight, some of them from 20 to 30 pounds

It is possible that some of these patients may not be permanently cured, considering the fact that remissions are so common in gastric ulcers

It is, of course, impossible to say whether all patients operated at Mount Sinai Hospital between 1915 and 1921 for pyloric or duodenal ulcer and requiring subsequent operations for gastrojejunal or jejunal ulcers are included in this list, as some patients may have been reoperated on in other hospitals A definite statement as to the frequency of this complication can only be made, if all patients are traced for many years after the operation by a perfect follow-up system

The number of gastrojejunal and jejunal ulcers has increased very rapidly during the last ten years This is entirely due to an improvement in our diagnostic methods Cases which were formerly labeled as postoperative adhesion are now properly diagnosed The vast majority of these patients can be cured by surgical interference

TABLE 2—METHODS OF OPERATION

Gastrojejunal ulcers		18
Excision	9	
Excision and jejunostomy	3	
Second gastro enterostomy	3	
Roux operation	1	
Jejunostomy	2	
Jejunal ulcers		3
Excision	2	
Roux operation	1	

It may be possible to reduce the number of gastro-enterostomies by a more direct attack of pyloric or duodenal ulcers Excision of the ulcer with subsequent gastro-enterostomy is frequently performed, when the ulcer is situated on the anterior wall When the ulcer was adherent to the pancreas and under surface of the liver, simple gastro-enterostomy with pyloric exclusion seemed the safer procedure

TABLE 3—SUMMARY OF RESULTS

Total number of patients		18
Operations		21
Operative deaths		2
Died subsequently		1
Not located		1
Too recent to draw conclusions		2
Reexamined (May 1921)		12
Cured	3 patients for 4 years 2 patients for 3 years 3 patients for 2 years 2 patients for 1 year	10 (83 per cent)
Improved		2

Haberer [9], however, has reported eighty consecutive cases without a death of unselected cases of gastric and duodenal ulcers in which he performed resection (Billroth 1) This more radical procedure may mean a step in the right direction

CONCLUSIONS

1 The cause of gastrojejunal and jejunal ulcers is probably based on the same factors (not definitely known up to the present) which cause pyloric and duodenal ulcers

2 Suture material is of minor importance If present, it may be considered as accidental finding No suture material was found in the cases above described

3 The proper diagnosis of gastrojejunal and jejunal ulcer can be made from the history and roentgen-ray examination in the vast majority of cases

4 Frequency of cases recorded in the last decade is based on improvement of diagnosis, not on increase in occurrence of the disease

5 Correct data as to the frequency of this disease cannot be obtained without a perfect follow-up system Such follow-up systems, which are in existence in some hospitals, ought to be established in every hospital

9 Haberer Anwendungsbreite und Vorteile der Magenresektion Billroth I Arch f klin Chir **114** 127 1920

6 Operative and final results are very good The operative mortality was less than 10 per cent and a cure was obtained in 83 per cent The vast majority of patients can thus be permanently cured by a secondary operation

7 It may be possible to reduce the number of gastrojejunal ulcers by a more direct attack of the pyloric and duodenal ulcers Improvement of technic may show that a large number may be treated by resection (Billroth 1) rather than by gastro-enterostomy

1155 Park Avenue

ABSTRACT OF DISCUSSION

DR EUGENE H POOL New York Dr Lewisohn referred to the causes of gastrojejunal ulcer Unfortunately, with one exception, all of the theories as to etiology have little to support them One exception he passed over too lightly, I mean, nonabsorbable suture material Undoubtedly this has been the cause, or the underlying basis, in a considerable proportion of the earlier cases of gastrojejunal ulcer In the first case I saw, an ulcer 1 cm in diameter had on its floor the knot of a continuous silk suture which could not be cast off because the rest of the continuous suture was incorporated in the wall of the stoma Undoubtedly irritation had occurred, with development of a fistulous tract from knot through mucous membrane, then erosion of the edges led to the development of a chronic indurated ulcer There are enough such cases to indicate the observance of the rule laid down by the Mayos that nonabsorbable suture material, especially continuous suture should not be employed in the performance of gastro-enterostomy Another feature of some significance is the tendency, noted by most men who have collected these cases, to a recurrence of gastrojejunal ulcer after excision of the ulcer and reconstruction of stoma, or formation of a new stoma In one case to which Dr Lewisohn referred, gastrojejunal ulcers developed twice and were excised Finally, the patient died as the result of carcinoma at the site of the third gastro-enterostomy A number of such cases have been cited Therefore, it seems wise not to reconstruct the gastro-enterostomy or make a new gastro enterostomy, but to separate the two viscera, jejunum and stomach, close them and, if possible, reestablish the normal conditions of the parts, that is, the continuation of stomach and jejunum This can be done only if the jejunal ulcer has healed, or can be excised and if the pylorus is patent One in every four cases is a symptomatic failure In following the late results of gastro-enterostomies for the last six or seven years at the New York Hospital, we found that one in every three cases of parapyloric ulcer, in which there was no barium retention after six hours, was a symptomatic failure This, therefore, is the type of case in which gastro-enterostomy should be done less often We could more frequently do something less revolutionary, namely a pyloroplasty, with excision of the ulcer, and cut down the actual number of gastrojejunal ulcers, though not the relative number, and we would at the same time reduce both the actual and relative number of symptomatic failures after gastro-enterostomy

DR J SHELTON HORSLEY, Richmond Va It is important to face squarely the cause of jejunal ulcers after gastro-enterostomy This cause is obviously the operation of gastro-enterostomy, which places a great burden on the operation Dr Pool said that if we can do away with gastro enterostomies, we shall have no gastrojejunal ulcers When there is obstruction at the pylorus, gastro-enterostomy gives satisfactory results, probably because the obstruction prevents the exit through the pylorus of gastric juice and so the maximum alkalinity of the duodenal contents is preserved and will readily counteract the acidity of the gastric juice at the stoma of the gastro-enterostomy and so protect the mucosa of the jejunum Too much stress has been placed on nonabsorbable sutures, turning in an unnecessary amount of tissue and the use of clamps These things usually give no trouble if used elsewhere in the gastro-intestinal tract Altered physiology of the jejunum by dumping strongly acid juice into it undoubtedly weakens the resistance of this tissue, and a small trauma, or a nonabsorbable suture, that could easily be taken care of elsewhere causes trouble here Similarly, if we change the reaction of the urine to alkaline for any length of time symptoms are created and irritation is set up There are doubtless many cases or irritation and congestion of the jejunum that produce symptoms for every jejunal ulcer that is found W J Mayo said last year that his treatment of jejunal ulcer after gastro-enterostomy is to undo the gastro-enterostomy and perform a pyloroplasty If this procedure is adopted by such an authority for the cure of jejunal ulcer, would it not be even better prophylactic treatment?

DR MOSES BEHREND, Philadelphia I still cannot be convinced that the nonabsorbable suture is the cause of gastrojejunal ulcer, because many gastrojejunal ulcers follow when

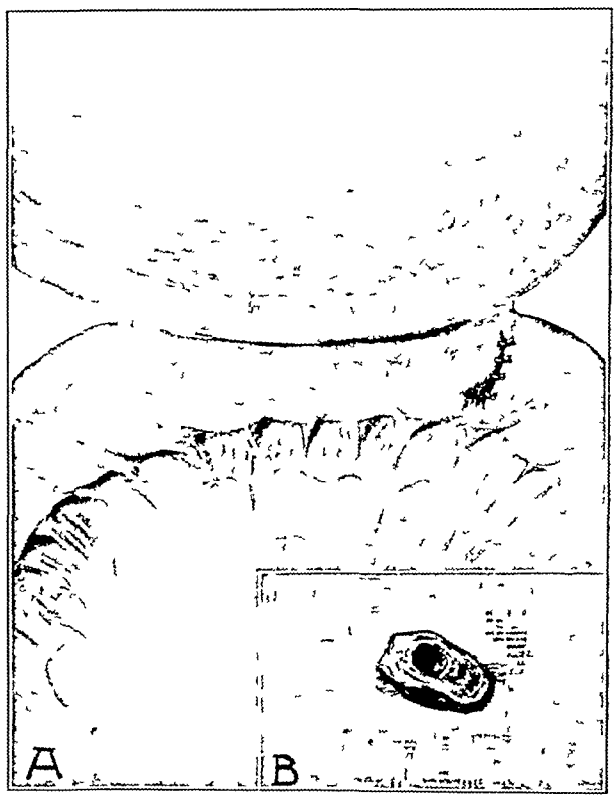

Fig 7 (Case 20) —*A*, jejunal defect closed *B* jejunal ulcer with crater

an absorbable suture has been used While the nonabsorbable suture may act as a mechanical irritant, there is another factor which causes the gastrojejunal ulcer, and that is undetermined at present The most important point that has been brought out in this paper is that we must do fewer gastrojejunostomies We can select our cases better now than we did before as, for example, cases of ulcer of the anterior wall of the stomach or near the pylorus that do not cause obstruction that do not require a gastrojejunostomy The operation devised by Horsley should be carried out more frequently than it has been in the past

DR FENTON B TURCK, New York A great number of the animals on which I experimented, by causing tissue breakdown, liberating the tissue toxin from their own tissues, developed ulcers, which leads me to believe that peptic ulcer is connected with the absorption of the tissue toxins of the animal I extracted the homologous tissue and injected it in lower concentrations into animals over a long period, and produced peptic ulcers Then I partially starved the animals to force them to break down their own tissue By feeding them with the usual food but adding substances

that break down the digestive apparatus, such as feeding extracts of beef and cultures of colon bacillus and fatty acids, it resulted in acute and chronic ulcers with perforation This interfered with digestion and absorption, causing tissue to break down The absorption of these toxic products of tissue breakdown resulted in thirty-six ulcers, both chronic and acute It was therefore concluded that acute, subacute and perforated ulcers are the result of tissue breakdown and not the result of infection When the animal loses its own protective power against its own tissue toxins there is stasis in the blood in the submucosa which results in these ulcers Every one of the secondary ulcer cases shows that these patients, when they had recurrences, were already in that latent ulcer condition, that is, lack of antibodies against their own tissue toxin Whenever you allow such a condition to arise, secondary ulcers must necessarily result When the condition of the normal antibody breakdown occurs, ulcers will form, and it requires no infection theory or other assumptions to explain the etiology of peptic ulcer

PYRETHRUM DERMATITIS

A RECORD OF THE OCCURRENCE OF OCCUPATIONAL DERMATOSES AMONG WORKERS IN THE PYRETHRUM INDUSTRY

CAREY P McCORD M D

C H KILKER M D

AND

DOROTHY K MINSTER

CINCINNATI

Pyrethrum (Dalmation or Persian insect powder, or buhach) is the most commonly used household insecticide at this time It is an efficacious and at the same time inexpensive agent Consequently, an extensive industry has grown up around the manufacture of the powder The extent of its use in this country is indicated by the importation in a single year (1917) of 1,504,000 pounds[1] of the crude material With the recent introduction of large scale production methods in the manufacture of the powder has come the realization that the industry is subject to conditions of work that are inimical to the health of exposed workers

TRADE PROCESSES

This powder is made from the flowers of three varieties of *Chrysanthemum* or *Pyrethrum* (1) *cinerariaefolium*, (2) *roseum*, and (3) *marshallii* or *carneum* The principal sources of these flowers are the Caucasus, Persia, Dalmatia, Japan, Montenegro and in recent years California There are three grades of flowers which determine the value of the powder as an insecticide (1) The open flowers make the poorest grade of powder, (2) the half closed flowers make a little better grade, (3) the closed flowers make the finest grade In times past, the stems of these plants have been used, but they are now recognized as containing only slight traces of the active insecticidal substances Formerly, adulteration with a variety of similar plants or with weight-giving chemicals, such as lead salts, was a common practice These varying adulterants were constant health hazards Today, adulteration is infrequent and health hazards center directly about the pure pyrethrum flowers The flowers are picked and dried by the growers The flowers compressed into bales are supplied to the manufacturer The further procedures, grinding to a fine powder, weighing, cartoning, etc, unless safeguarded, constitute the processes found to be harmful

SUBSTANCES RESPONSIBLE FOR THE HAZARD

The precise principle contained in pyrethrum leading to its insecticidal properties is not definitely known By Fujitani[2] it is believed to be "pyrethron," a neutral ester Reeb[3] found the active principle to be an acid which he called "pyrethrotoxic acid" More recently, McDonnell[1] isolated each of the two substances previously mentioned, together with other acids It is tenable to attribute an insecticidal value to more than one of these isolated bodies

The irritating action on the skin of the workers may not wholly be linked up with any of these chemicals, as other substances in pyrethrum having no known insecticidal value are well known local irritants In addition to the foregoing insecticidal chemicals, analyses have shown the presence of pyrethrum camphor, $C_{10}H_{16}O$, an acrid resin known as pelletorin, essential oils, an alkaloid, inulin, tannin, etc Resinous substances have been found in samples of pyrethrum flowers in as high a percentage as 13 76 The yield of alcohol-ether extractives is as much as 30 47 per cent These ill classified resins oils, camphors, etc, are accepted by us as irritants contributing to the etiology of the lesions observed

CLINICAL CHARACTERISTICS

On the assumption of industrial medical work in a plant manufacturing insect powders, we were apprised of the long-standing occurrence of an unknown skin disease among the employees A cursory investigation established that the condition prevailed only in those departments handling pyrethrum

These departments employed approximately eighty-five men and women Seventy-five women were engaged in filling, weighing and sealing the containers The grinding of the material was done by eight or ten men on another floor The conduct of the work resulted in a coating of pyrethrum dust on the arms, faces and other exposed parts of the workers In addition all workers were exposed to the dust in suspension in the air of the workrooms

Occasional cases of this insecticidal dermatitis may occur during the cold months of the year In summer months, the incidence is greatly increased, owing to the apparent solubility of the toxic substances in the perspiration of the workers' bodies During the months of April, May and June, eighteen workers handling this insecticide have reported to the dispensary for treatment We believe that the cases observed exhibit but one primary condition, a dermatitis venenata (pyrethrum dermatitis) which, however, presents variations permitting four groupings

1 *Erythema Venenatum*.—This type is so common and so trivial that many workers thus affected have not reported to us because of the mildness of the condition Approximately, 30 per cent of all workers are known to have been affected with this type of skin lesion It is prone to occur on the face and forearms, being generally distributed The skin is roughened and an

1 McDonnell C C Insect Powder Bull 824 U S Dept Agric June 3 1920

2 Fujitani J Chemistry and Pharmacology of Insect Powder Arch f exper Path u Pharmakol **61** 47 76 1909 Chem Abstr **5** 966 1911

3 Reeb E Principe actifs de la poudre insecticide J pharm Elsass Lothringen **35** 267 (Dec) 1909 cited in Bull 824 (Footnote 1) p 72

erythema pervades the entire area In a few days the superficial layer of the epidermis desquamates During the entire period, the pruritus is very annoying, unless relieved by medication In some of the workers this dermatitis continually reappears during the entire period of exposure, clearing up, however, on removal from the source of irritation

2 *Vesicular Dermatitis*—This frequently observed lesion is more specifically peculiar to pyrethrum The first manifestation is a few superficial, fine papules, grouped in widely separated areas about the size of a dime In from twenty-four to forty-eight hours the papules become vesicular, even approaching blebs or bullae in size One case warranted a diagnosis of dermatitis bullosa The tissue surrounding the vesicles may show a moderate erythema The vesicles break or are absorbed, and do not go through a pustular stage under ordinary circumstances With or without treatment, these vesicles disappear in two or three days when irritation is removed Such cases as have come under our observation have presented eruptions only on the hands, forearms, faces and ankles The pruritus in this type of lesion is intense

3 *Papular Dermatitis*—This affects especially those exposed parts of the body where moisture collection is facilitated, such as the eyelids and folds of the skin of the neck The lesion resembles Type 1, but in addition, superficially seated papules in large numbers are prone to occur These papules do not become vesicular, and disappear quickly under treatment The pruritus constitutes the chief cause of complaint, and the entire condition is much aggravated by scratching

4 *Anaphylactic Type*—Only one case of this kind has come to our attention The plant engineer is at infrequent intervals called on to adjust machinery in the pyrethrum grinding room Whenever thus exposed to this dust, there immediately is begun a condition resembling in part the skin conditions described above and in part resembling an intense local anaphylaxis

The site and nature of the lesions are identical during every attack, but they are more easily induced when the patient perspires freely Shortly after entering the dust-laden room, the skin of the face is reddened, burns and itches Very rapidly the cheeks, especially below the eyes, become swollen, indurated and erisypeloid in appearance The affected areas are raised and indurated, with fairly well outlined edges Soon the eyelids become swollen, the lids may even be entirely closed The pruritus becomes very intense The entire condition disappears in two days if the patient is removed from the dust irritant

TREATMENT

After removal from the irritant through replacement of the patient at other work in the plant, or through protection of exposed parts with bandages or suitable garments, this dermatitis tends to disappear speedily Removal from the irritant, followed by the use of any bland ointment, has been found efficacious The relief from the distressing pruritus is the chief demand made by the patients As the eruption is likely to reappear soon after reexposure, preventive measures are regarded as the best avenue for the elimination of these conditions

PREVENTIVE MEASURES

It is being demonstrated in the plant under observation that all the dermatitis-producing hazards may be avoided through the introduction of machinery Dust-proof grinding, automatic filling and weighing devices, etc, have resulted in the prosecution of this work without contact between the workers and pyrethrum materials

In the absence of such machinery, the following protective measures may be found helpful

1 Scrupulous personal cleanliness of the worker is requisite In the plant this can be facilitated by adequate washrooms, frequent change of work garments, cleanliness of work tables, seats, etc, together with general cleanliness of the workroom

2 On starting work in the morning and at noon, cold cream, petrolatum or the like should be applied to the exposed parts of the body

3 At night, the arms, hands and face should be bathed in water containing sodium bicarbonate, approximately in amounts of 1 teaspoonful to 1 gallon of water There is some reason to believe that the irritating substances are acid and are thus neutralized by the sodium bicarbonate

SUMMARY

An occupational dermatitis has been found to occur among the workers engaged in the manufacture of pyrethrum insect powder Chemical analyses of pyrethrum have established various constituents having irritant properties The lesions noted are, essentially, various forms of dermatitis venenata They are of mild severity and quickly disappear under ordinary treatment Reexposure frequently leads to the reoccurrence of the disease This dermatitis may be prevented by the introduction of trade processes that eliminate the necessity of exposure of workers to pyrethrum dust and powder

214 West Seventh Street

TRANSPERITONEAL CESAREAN SECTION

HIGH OPERATION—COPELAND TECHNIC *

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On examining many modern textbooks on obstetrics for the technic of transperitoneal cesarean section, I have been impressed by the lack of many essential details, notable variations of opinions, and much vagueness Observations on the operating technic of various surgeons and the apparent lack of a clear mutual understanding among the individuals composing their operating teams, and numerous discussions with many physicians and nurses concerning the actual performance of this operation convinced me that there was still much room for improvement Having studied this operation for about ten years, and having developed a technic which is safer, swifter and surer than any other of which I know, one which has safely stood the test of subsequent labors, I have felt that you might be interested in hearing of it

The late Professor Cragin said in his "Practice of Obstetrics," "The question is often asked, What is the advantage of a quick operation in the performance of a cesarean section? Why is a fourteen and two-

* Read before the Section on Obstetrics Gynecology and Abdominal Surgery at the Seventy Second Annual Session of the American Medical Association Boston June 1921

third minutes completed operation" (Cragin's fastest) "better than one consuming an hour?" All surgeons realize that any operation in which careful technic is sacrificed to time, is faulty in the extreme However, in a cesarean section, a careful technic coupled with a short time, is preferable to a careful technic coupled with a long time, for these reasons From the first cut in the uterus, until the uterine incision is closed and the uterus replaced in the abdominal cavity, the woman is losing blood from the uterine sinuses The loss of blood means lessened resistance to infection, and a slower convalescence Hence, if performed with the same care, a short cesarean section is better for the woman than a long one" I would add to this, that the faster the operation, the easier it is to obtain good apposition between the cut edges of the uterus There is a primary and very uniform contraction of the uterus as soon as it is emptied This is the optimum time to suture the several layers of the uterine muscle with an inclusive bite of the needle through all the layers when using a running suture (Original) Irregular contractions appear rather quickly following uneven massage, and loss of tone, and good apposition and hemostasis become increasingly difficult A rapid operation markedly lessens shock, hemorrhage, exhaustion, chilling, handling of abdominal contents, and poisoning from the anesthetic Hence, any *safe* technic which shortens the time of operation, and is so simple of execution that any one with fair surgical training can readily employ it, is worthy of careful consideration For, while the margin of safety is wide in the average case, a surgeon with a slow and complicated technic can never speed up without danger of losing something essential in an urgent case, such as a central placenta praevia with severe hemorrhage, when a swift operation might well be life-saving

Preoperative precautions should include a careful selection of cases, elimination of all vaginal examinations and manipulations when cesarean section may later become necessary Trial by labor in border-line cases should be short, unless reasonable progress, as determined by abdominorectal examination, is being made Exhaustion of the mother and child should be forestalled Operation should be performed early In definitely contaminated cases extraperitoneal cesarean section or some procedure other than the classic operation should be employed, Brouha [1] to the contrary, notwithstanding The patient should be encouraged Watson has ably described "The Indications and Limitations of Caesarean Section," [2] and has shown how dangerous this operation is, even today, unless properly performed In cases that are not of an emergency nature the patients should have a high carbohydrate diet for a few days if possible, and a guaranteed sleep the night previous to the operation No purgation is given except for complicating toxemia

Having critically examined various types of cesarean section, I reached some important conclusions, only two of which I shall discuss here

First, if several methods of suturing the uterus and abdominal wall give equal end-results, but if one method is outstandingly simple and swift, obviously it is the one to adopt The continuous or running suture is safe as proved by the work of Cragin, De Lee and others, and is much simpler and faster than numerous interrupted sutures Nonessentials, such as eventrating the uterus, or packing it off before opening, dilating the cervix, clamping the broad ligaments and silk sutures, I eliminated

Second, the psychology of teamwork in this operation has not been adequately applied among the profession at large To those of you with a well organized and permanent operating staff, the following remarks may seem trite, but I work with a rapidly changing personnel, as most of us do I gradually realized how important it was to overcome the nervousness of a willing, but inexperienced, nurse assisting at, perhaps, her first cesarean section I now, therefore, just before the operation, explain carefully and fully to the instrument nurse, in a friendly way, exactly what I wish her to prepare, and the order in which I shall ask for needles, sutures, etc Should a nurse fail to read the mind of the surgeon, and hand the wrong instrument, and if he starts to shout at her, she becomes confused, the surgeon fails to get the best possible service, the operation is delayed, and the patient suffers I believe firmly that the human element in the operating team has been very much neglected—it is the weak link I strengthen this link and expedite the operation at least a quarter of an hour

COPELAND TECHNIC

I carefully explain to each of my various assistants before each operation, the exact procedures I will probably perform, and how and when I will expect them to carry out the particular parts I shall assign to each of them The time I spend in instructing and coaching the operating team before the operation starts is time that many surgeons lose at the expense of the patient during the actual performance of the operation, because they have failed to grasp the great importance of this point This is an absolutely essential part of my technic

The following instructions, necessarily brief in this paper, are varied to suit each individual operation I explain the whole operation, and then assign special duties to each assistant

Instrument Nurse—All needles are to be large and curved Needles for the uterus and peritoneum must not have cutting edges, but for the fascia and skin cutting edged needles are used All sutures, except the silkworm gut tension sutures for the skin, are to be long, double and knotted First, for suturing the uterus, thread three large muscle needles with medium tanned, chromic catgut, No 1 Hand the needles to me without any needle holder, as I ask for them, as soon as the baby is removed Second, for the peritoneum, thread one large muscle needle with plain catgut, No 0 Verify sponge count Third, for the fascia, thread two large cutting edged needles with chromic catgut No 2 Fourth, for the skin, thread four large cutting edged needles with silkworm gut and hand to me on needle holders Have ready Richter's magazine holder loaded with Michel clips to close the skin, instruments, apparatus and drapings as for ordinary laparotomy, special, McDonald's solution for abdomen and hands of operating team no iodin, Crossen's continuous gauze sponge I confirm all this before starting

Anesthetist—I prefer nitrous-oxid with the maximum of oxygen and a little ether, or what is more convenient, and very satisfactory is the specially purified Dupont ether invented by my friend Dr James Cotton of Toronto *I want the minimum of anesthetic, consistent with complete loss of pain and absence of straining* When I am ready to start the skin incision, flood the mother with several breaths of pure oxygen to hyperoxygenate the baby, as I have described elsewhere [3] This is

1 Brouha Cesarean Section in Infected Cases Gynec et Obstet 2 383 1920 abstr J A M A 76 1283 (April 30) 1921

2 Watson B P The Indications and Limitations of Cesarean Section Canad M Monthly 4 89 (April) 1920

3 Copeland G G Nitrous Oxid Oxygen Analgesia and Anesthesia in Obstetrics Canad M J 1 405 (May) 1917

valuable, as it guarantees the baby's being in the best possible condition on extraction from the uterus and usually immediate crying As soon as the baby is removed, give by hypodermic, ¼ grain morphin sulphate, and 1/150 grain atropin sulphate

Resuscitator of Baby—To be aseptic, no mask, to stand at foot of table to my right Wrap sterile towel around the legs of the baby and grasp it firmly to prevent slipping The steps I usually employ to start the baby breathing are inversion, clearing the throat, spanking and hot bath These failing, perform direct mouth to mouth insufflation through sterile gauze first filling your own lungs with pure oxygen (original), pressing on stomach to prevent the entry of air except to lungs Cragin's[4] throw is valuable A personal explanation of the value of this method of resuscitation is that the sudden throw upward notably increases the blood pressure, the return should be rather slow, since, if too rapid, it lowers the blood pressure (Personal experiments)

First Assistant—The best available surgeon Please sponge, help me open peritoneum, and when I remove the baby, clamp cord with two forceps and cut between As I remove the afterbirth, inject into several places in the fundus uteri, parts of 1 cc of pituitary extract from an all sterile syringe till all is given If I ask you to remove the afterbirth, avoid the cervix, which is probably not sterile and which always opens promptly as soon as the uterus is emptied Redrape, sponge cut edges of the uterus, tie sutures, follow me up, pulling suture snugly but not tightly, push edges of uterus together to minimize tearing effect on the muscle Cut loose ends Lift abdominal walls when uterus is closed so I can replace it Pick up peritoneum on my side with Kocher's forceps, I will do the same on yours Hold peritoneum together while I sew it up Similarly, assist me with the fascia While I am closing the upper half of the fascia, you insert the silkworm gut tension suture at the bottom of the cut, being careful to avoid cutting sutures already in the fascia Go through the skin and fascia, and leave the ends loose, I will tie them Cut all loose ends at the bottom the second assistant will cut all the upper loose ends You hold the skin edges together and slightly everted while I place the Michel skin clips Apply McDonald's solution and dressing

Second Assistant—Usually a house surgeon Press sides of abdomen so as to push the uterus tightly against the midline The baby removed, cover upper half of cut with a hot wet sterile towel to protect the intestines Grasp the uterus at the cervix with both hands, thumbs under and behind, fingers at side Bring uterus out of abdomen and hold up, handy for surgeon to suture Cut all upper loose ends of suture about one-fourth inch from the knot Sponge, as suturing is done Keep bowels back Pull Crossen sponge toward you

Timekeeper—Call out the time taken from the instart of the first cut, when the baby is removed, when the afterbirth is removed, when the uterus is completely sutured, when the skin is completely closed

Surgeon—I stand on the right side of the patient, assistants on the left, resuscitator to my right McDonald's solution is applied to the abdomen, then sterile drapes I pin an open bag of Crossen's continuous gauze sponge on the right side of the drapes When the patient is ready, she is flooded with oxygen

Operation—Time I make a rapid incision from above downward for about 5 inches, more or less, depending on the patient The incision is started about an inch above and an inch to the *right* of the umbilicus to compensate for the usual dextrorotation of the uterus, and also to prevent the wound's being drawn down into a hole, which happens if the cut is too close to the umbilicus, which sinks in during convalescence I bring the lower end of the cut to the midline Keeping the incision away from the umbilicus lessens the chances of maceration and infection (Original) The peritoneum is carefully opened with scissors between the fingers The uterus, still in the abdomen is opened in its anterior upper third in its midline, using a fresh knife Generally, three strokes are employed in making the 5 inch opening The last stroke is made very carefully to avoid cutting into the membranes which usually promptly bulge at this stage and are carefully nicked and opened by the fingers, or if the placenta is encountered, I shell it off the uterus upward with the fingers, till the membranes are reached These are then opened, and a foot grasped and the child carefully extracted Up to this stage, I proceed cautiously to avoid cutting a chance loop of bowel, cutting the baby or injuring it by forcibly jerking it out of the uterus, the three real dangers After that I proceed as fast as I can, consistent with a good technic Handing the child to the resuscitator, after the first assistant has cut the cord between the clamps, I remove the afterbirth, keeping away from the cervix as much as possible, unless a placenta praevia forces me to go to that locality After rinsing my hands, I take a Copeland tissue forceps in the left hand and the large muscle needle in the right hand threaded with chromic catgut double and long The assistants have meanwhile put in the pituitary extract and applied fresh drapes, and are holding the uterus up accessible and sponged Starting at the bottom of the uterine cut, I *take deep bites through the whole of the uterine muscle down to the mucosa* The value of this is shown by De Lee I use only my fingers as needle holders, thereby saving at least a hundred needless steps which would be necessary if I used a needle driver I use a running suture, taking from five to ten stitches, depending on the length of the uterine incision and the condition of the muscle, the firmer the muscle, the fewer the stitches Usually one layer to the muscle is sufficient, occasionally two The peritoneal surface of the uterus I invert with a Cushing suture, taking bites about one-fourth inch to one-half inch long, parallel to and one-fourth inch from the cut edge When finished, no sutures show, the uterus is quite smooth, only two knots are visible Adhesions are minimized In the average operation, I have now taken five minutes from the time of the first skin cut.

If only a little blood remains in the abdomen, it is not sponged out, as sponging favors adhesions Leave it I return the uterus to the abdomen and watch for bleeding If oozing has occurred, I have tried hot towel compression, this failing, a mattress suture I here make sure that no foreign body is left behind, the peritoneum is secured and closed with plain No 1 or No 0 catgut on a large muscle needle The fascia is closed with No 2 chromic catgut, double, locking frequently, and using a large cutting edged needle I then go to the bottom of the cut and tie the silkworm gut tension sutures placed by the first assistant while I was finishing the closure of the fascia This done, I bring the skin together with Michel clips Time McDonald's solution and dressing

RESULTS

I have performed cesarean sections about twenty nine times, as well as assisting at about as many more There have, fortunately, been no deaths due to the operation in my series

Two women died who were operated on Death in both these cases was prognosed before the operation as highly probable, but two babies were saved, otherwise positively doomed The first woman to die was a primipara, at full term not in labor with a rigid cervix and who was having convulsions alternating with coma The immediate operative recovery was good, but she died in thirty hours, quite suddenly, immediately following a hemiplegia She never came out of the coma in which I saw her for the first time in consultation The case is more fully described in my last article on eclampsia[5] and forms one of the very few deaths in a large series of eclamptic patients The second death was in a primipara a rachitic dwarf, sent into my service after thirty hours' futile labor, the head not even being engaged She also had influenza complicated by universal bronchopneumonia during the height of the 1918 epidemic Immediate operative recovery was good but the lungs filled up Death was from the progressive pneumonia, and occurred in twenty-four hours after operation

Twenty-three of these women had contracted pelves The operation was performed for the second time in four cases, and for the third time in one Steriliza-

4 Cragin Practice of Obstetrics Figs 256 and 257 1916 Lea & Febiger

5 Copeland G G The Treatment of Eclampsia Observations Methods and Results in Some Fifty Three Consecutive Cases with 3 7 per cent. Mortality, Canad M Monthly 4 106 (April) 1920

tion has been done in addition to the cesarean in five cases In several of these women, there were other complications, such as preeclamptic toxemia, advanced age and weak heart One woman had central placenta praevia with massive hemorrhage Both the mother and child were saved There was one case of obstructed labor from congenital pelvic kidney, fuller report later, two cases of spondylolisthesis of the fifth lumbar vertebra, two women with normal pelves, but histories of previous severe labors, serious lacerations followed by extensive operations, to avoid a repetition of which they asked me to perform cesarean section

While this is a small series compared with the experience of some surgeons, yet the improvements in my operating methods have been progressive

Since standardizing my technic, I have performed about twelve completed cesarean sections in about fifteen minutes or under The fastest cesarean section, combined with sterilization attained by excising wedges of the uterus containing the tubes, from the instant of the first cut till the abdomen was completely closed and a dressing applied, was fifteen minutes and forty seconds The other operating times were fifteen, fifteen, fourteen twelve and one-half, eleven and three-quarters, ten and one-third, ten, and nine and three-quarters minutes The last group of three were performed within twenty-four hours, Cotton process ether being used, and two being performed for the second time, which caused some delay owing to some adhesions, as I had used iodin at the first operations The last three consecutive operations, with the aid of good assistants, I performed in nine minutes and forty seconds, eight minutes and fifty seconds, and my fastest time to date is *eight minutes thirty-five seconds for the completed operation* In all of these the child took more than a minute to extract, while my fastest extraction was twenty-five seconds Flooding the mother with oxygen prevents any need for haste Almost as good speed has been made in the performance of the actual cesarean part of other operations, but the presence of complications has increased the total time When a uterus bleeds abnormally, time *must* be spent to make sure of hemostasis I wish to state most emphatically that in all these fast operations, safety has been of first importance, and speed has been attained not by reckless slashing, lightning-like movements, or genius, but by hard won experience and skill, to some extent Mostly, however, it has been attained by loyal cooperation on the part of my assistants as a result of mutual preoperative understanding, by the elimination of nonessentials, which I studied to some purpose under Sir John Bland-Sutton The ultimate good results depended in no small measure on the attainment of the aseptic technic so well taught me by Dr Wilbur Ward of New York in Sloane Hospital, and the careful selection of cases as was impressed on me here at Harvard

A careful preoperative preparation, a capable anesthetist, giving a minimum of anesthetic, a simple, rapid operation with the least possible handling, and good postoperative care have resulted in my patients having as a rule, a remarkably smooth recovery

If I shall have impressed the men who performed only an occasional cesarean section, with the great value of a preoperative discussion, I shall feel justified in reading this paper

While I know that I have not yet performed a perfect operation, yet nothing but the best surgical practice has been followed, nothing essential has been omitted, nothing unnecessary done To have taken a longer time would not have guaranteed greater care, nor better work, but I assure you these speeds have not been reached in a day Several of the women operated on have subsequently had severe labors under other physicians, with bad results, but the uterine suture has stood firm I always feel that my methods are not final, but in a state of evolution, ever striving toward that impossible perfection so well described by Monte Cristo, "Human inventions march from the complex to the simple, and simplicity is always perfection"

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ABSTRACT OF DISCUSSION

DR WILBER WARD, New York The particular merit of Dr Copeland's procedures is their utter simplicity I am not quite in accord with the present day tendency of the multiplicity of drapings of the abdominal wound—abdominal pads, retractors, etc Dr Copeland uses no pad, except for the purpose of retaining the intestines at the upper angle of the wound after the uterus has been delivered and is everted for purposes of suture He does not protect the abdominal incision with sterile drapings prior to incision of the uterus I have seen quite a few operators do cesarean sections under varying conditions and some of them have been most elaborate in their technic They have made slow incisions through the abdominal walls, have put on sterile towels to protect the edges of the incision, have carefully walled off the uterus with pads so as to protect the adjacent viscera, have in certain cases even put in sutures in the interior surface of the uterus prior to its incision, so as to make sure the incision should be in the midline I have seen these patients in their convalescence, and there is no question in my mind that convalescence is much more stormy, as expressed in the usual terms of nausea and vomiting, distention, pain and even fever Dr Copeland's method is very simple Frankly, I do not think it makes much difference whether one uses a needle holder or not, whether one uses a large needle with No 1 catgut or a smaller needle with No 0 catgut or whether the catgut is plain or chromicized The incision in the uterine wall falls together quite naturally and very well even without sutures Of course, one would not advocate the omission of sutures The point is that the suture of the uterus should be clean and neat, but it does not make a great deal of difference as to what sutures are used, whether two layers or three layers for the uterine musculature I disagree emphatically with Dr Copeland on the question of time I do not think it possible for any one to time operations with a watch and not miss a trick To attempt to hurry or to beat a previous record is poor surgery A fifteen minute operation is better than one taking an hour, but the extra two or three minutes will not count in the long run

DR W M BROWN, Rochester, N Y I agree with Dr Ward in his criticism of the dangers of too much speed in these operations Of course speed in all surgical work is to be sought, but certainly not at the expense of careful surgical technic The convalescence and the after-result in these cases depends on the careful technic with which the closure is done. The technic has evolved from the old long incision, eviscerating the abdominal cavity, packing off the intestines, and then opening the uterus, to the Davis operation, with a very short supra-umbilical incision, and later the admirable operation suggested by De Lee A low incision, practically a cervical cesarean section which has some of the benefits of the extraperitoneal and the transperitoneal operation at the same time, will ultimately be the operation of choice Speed is desirable in getting the uterus emptied and the preparations made for the closure After that time should be taken to do the work carefully and with minute attention to detail The question of assistants is of importance I have chosen one man who acts as my first assistant, who always is there, and who knows the work He can do it just as well as I can There is practically never a word uttered during the operation The assistant motions to the nurse, who has been trained so that

she knows beforehand They know just what sutures and what needles and everything else are required I seldom do a cesarean section in twenty minutes, but I usually have the baby in the next room in from two to two and one-half minutes For anesthesia I am using Cotton ether Generally I operate under a very limited amount of gas, really a state of analgesia—plus 0 5 per cent of procain locally, and the convalescence of the patients is marvelously better under those conditions As soon as I have opened the peritoneum, the uterus is held firmly against the abdominal wall by pressure, making a partial incision through the uterine muscle, and then before I have gone into the uterine cavity I take the ordinary towel clamps and just snap the uterine incision right up to the abdominal incision, which holds the uterus The incision is finished through the uterus The baby is lifted out, and the placenta delivered, and then the intramuscular sutures are inserted before those clamps are taken off In that way I do not use any packing at all The result is that I do not have to attend to any peritoneal toilet at all, and that is of great value It saves time, and certainly does not interfere with convalescence

DR P B SALATICH, New Orleans In a clean case, it does not make much difference what form of operation is performed In a septic case conditions are different On the method I have followed, and one most of us use at the Hotel Dieu, we have made, ahead of time, a large rubber sheet In the center, about 8 by 10, we have sewed a piece of rubber tissue, and a small opening (2 by 2) is made in this rubber tissue. This is only for septic cases We make an incision sufficiently large to deliver the uterus, and then we slip this piece of rubber tissue over the uterus, and that completely isolates and cuts off the abdominal cavity Then we incise the uterus and remove the baby, sterilizing as well as possible the uterus before we return it into the abdomen

DR JOSEPH B DE LEE, Chicago It is time for us to unite on a set of names for the various forms of cesarean section which are now being promulgated I rather dislike the term "transperitoneal' as applied to the old operation, the old classic cesarean section I think we ought to distinguish two general types of cesarean section—the high and the low The high cesarean, the old classic cesarean through the fundus of the uterus, we might call fundal cesarean sections The new operations—they are old, too, but recently revived—are the low, sometimes called the cervical or lower uterine segment cesarean section Nowadays, when a man is going to do an abdominal delivery he should say he is going to do an abdominal delivery Which form of cesarean section or abdominal delivery will he make? The fundal or corporeal the high, old-fashioned classic, or the new operation, the low cesarean? If the low operation he has two courses the extraperitoneal, in which the peritoneal cavity is not opened, and the low cervical intraperitoneal, or transperitoneal—better intraperitoneal—in which the incision is made in the lower part of the abdomen and the lower part of the uterus, but the fundus is not invaded Dr Copeland's operation is the old classic cesarean section I am opposed to hurrying in cesarean sections I once delivered a baby in thirty-nine seconds It is absolutely foolish and fatuous Thirty-nine seconds is not time enough to open the abdomen and deliver the baby in safety to the mother or child Why should we hurry? The few minutes of anesthesia are negligible If we take longer time we avoid the dangers of hernia We are able to make that incision through the skin and fascia, and shell out the rectus muscle from its sheath, and make the incision in the peritoneum in another place, so that later on the muscle acts as a dam to prevent hernia We can therefore guarantee the woman's future comfort and ability to work Secondly, we can take time to extract the baby, and thus prevent postpartum hemorrhage The uterus should have time to contract and retract Then, too a sufficient number of layers of suture should be applied It is a positively demonstrated fact that on the fifth day postpartum the uterine cavity is invaded by bacteria from the vagina Even if we do not have a leaky line of incision, in the presence of bacteria this point becomes of danger to the mother There will occur adhesions in the milder cases and peritonitis in the severer cases The doctor has had twenty-nine cases without a death, but he will have a death sooner or later I have had one Everybody who does a large number of cesarean sections will have a death even in a clean case We must prevent those accidental deaths, and one of the strongest precautions against them is a properly applied uterine suture I use four, and sometimes five rows of sutures in the uterus, taking care to apply them so that they do not produce necrosis I suture each layer of the uterine muscle individually No one can put those sutures in in the time specified by the essayist You will be surprised at the number of cases of rupture of the uterus, not reported in the literature One or two rows of sutures hastily applied cannot guarantee against this accident Every once in a while we hear of a death from postpartum hemorrhage after cesarean section Rapid emptying of the uterus conduces to postpartum bleeding Most of the evils of the old classic cesarean section are avoided by the new low cervical operation

DR GORDON G COPELAND, Toronto, Canada I am afraid I went a little too fast in my paper to bring out the point Dr Ward called to your attention I do use very careful aseptic technic and use sterile "drapes," and have them pinned into place with towel clips before I start the operation Possibly an inch width of the skin shows when I start the incision The amount of anesthesia is one of the big factors in the danger of postpartum hemorrhage If you cut down the anesthetic, the uterus will contract very much better The elimination of needle holders cuts out practically ten minutes of time If Dr De Lee puts four or six layers of sutures in the uterine wall and uses a needle holder to put them in, it means he must use from two to three hundred separate operations to adjust that needle holder to the needle That takes time That time is not spent in suturing the uterus It is spent in fussing with the needle holder I wish to make emphatic the point that I have never tried to make a record These fast times have been made with great safety I take a minute, sometimes much longer, to get the baby out I go slowly where the danger points lie I make speed, but not at any loss of essential details of technic I am not a fast operator, and I get this great saving in time simply by thorough work and the elimination of nonessentials I agree with Dr Brown about elimination of packing, and so forth I agree with Dr De Lee as to the title of the paper and his method of using the low operation for potentially or actually infected cases I am not discussing that operation at all I am discussing Dr De Lee's operation, which is an excellent operation, and much better than the high operation in those cases in which it is indicated As to suturing the uterus in several layers, we cannot say in advance in a given uterus how many layers we ought to put in What is important is good apposition If you can get good apposition with only one layer, it is sufficient To put more in is to invite trouble from catgut Bland Sutton has shown conclusively the value of a minimum amount of foreign body in muscles I believe that if we can get thorough apposition with one or two layers, that is far better than putting in two or three more layers, and saves a great deal of time to the patient, and that time means absence of danger of postpartum hemorrhage and a much smoother convalescence No attempt is made to attain speed at the risk of safety But I do get speed by eliminating if I may use the word, "junk,' and by having thorough cooperation with the operating team

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Federal Eugenic Law—The federal government has exclusive jurisdiction over immigrants, and it controls interstate and foreign quarantine It has also exclusive jurisdiction either direct or final, over the socially inadequate, both within and outside custodial institutions, in the District of Columbia, the Indian reservations, and the territories which have not yet been admitted to statehood It controls the twenty-four federal custodial institutions for various types of the socially inadequate Thus a federal law would be needed in order to cooperate effectively with the eugenical efforts of the states, should the latter generally determine upon sterilization as a means for cutting down the birth rate among degenerates—H H Laughlin, *Social Hygiene* 6 532 (Oct) 1920

THE INCIDENCE OF CANCER IN THE SECOND BREAST

AFTER RADICAL REMOVAL OF ONE BREAST FOR CANCER*

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The appearance of cancer in the remaining breast after radical removal of one breast for cancer is of interest both on theoretical and on practical grounds first, on account of its bearing on the problem of individual susceptibility to cancer, or the existence of a "cancer diathesis" Is cancer a pure accident, or does its occurrence mean that the person affected is more susceptible to it than another, and therefore more likely to be attacked again if cured of the first tumor? In the second place, the practical question is raised of the advisability of removal of the second breast to protect against cancer

A discussion of the first problem, that of a "cancer diathesis," or individual susceptibility to cancer, is made difficult by the impossibility of deciding with certainty, in a given case, whether a cancer developing in the second breast after an interval of years is a true primary growth, or simply a late metastasis, since late metastases in organs in which primary tumors could not arise are well known It will be shown, however, that many of the cancers in the second breast behave as if they were primary; they arise independently of metastasis in other regions and run courses exactly comparable to the expected course of primary breast cancer in the matter of length of life occurrence of axillary metastases only on the side of the second tumor, etc

While the cases studied for this paper have been grouped, as a matter of interest, according as their histories suggested a primary or a metastatic nature of the second cancer, no attempt will be made to elaborate on this point, but the practical side of the problem only will be discussed Is the incidence of cancer in the second breast high enough to warrant removal of the breast as a prophylactic measure, either at the time the first breast is removed, or later? If the cancer arising in the second breast behaves clinically like a primary tumor, and the metastases of which the patient dies come from it, the patient is little benefited by a discussion of the academic question of the true primary or recurrent nature of the second cancer In other words, even if all the cases are recurrent—we dissect the axilla to prevent death from metastasis—we should excise the second breast if a sufficient number of primary or recurrent cancers occur in it to justify the procedure

This investigation, therefore, has been undertaken to ascertain the frequency of cancer appearing in the second breast and behaving clinically as if it were a new and independent growth The subject has been studied with particular reference to the important element of time interval between the first operation and the development of cancer in the second breast From 50 per cent to 75 per cent of breast cancer patients die in from three to five years after the first operation, and would not be saved in any case by attention to the second breast It is obviously of much less importance to know what percentage of a total initial series of patients will develop cancer in the second breast than it is to know what percentage of the patients remaining well after from three to five years will do so

BILATERAL BREAST CANCER IN LITERATURE

Brief mention of cancer of both breasts, either coincidently, or first in one breast and later in the other, has been made by many authors Rodman[1] states that he has seen only two cases of coincident cancer of both breasts, and quotes statistics of several continental authors giving percentages varying from 1 to 15 per cent[2] of all breast cancers He believes that the cancer of the second breast is usually, if not always, metastatic from that in the first breast

Willard Parker,[3] reported cancer of both breasts in fourteen out of 397 cases, 3½ per cent

Judd and Sistrunk[4] "have had several with both breasts involved, either coincidently or later" Lockwood[5] mentions an incidence of cancer of both breasts of eight in 166 cases, 5 per cent

Davis[6] reports 166 cancers In one case, cancer of both breasts occurred simultaneously In seven cases, the patient returned subsequently with cancer of the opposite breast Of these, five died and two were living six and one-half and seven and one-half years after the second operation

The largest series of cases from which statistics were drawn was that of Judd and Sistrunk, 609 cases They operated for recurrence in the opposite breast in two cases, nine and twelve years later, and state that in "several cases" both breasts have been involved, either coincidently or later

It will be noted that in these reports, little study has been made of the *interval of time* between the first operation and the appearance of the second cancer The percentages noted are percentages of the entire series of cases of breast cancer in each author's experience, and take no account of the percentage of patients living, three, five, or more, years after the first operation, who develop cancer of the opposite breast

RESULTS OF STUDY OF ONE THOUSAND ONE HUNDRED CASES OF CANCER OF BREAST

I have had the opportunity to study from this point of view the material of the surgical service of the University of California Hospital, by permission of Dr W I Terry, chief of service, and in the surgical pathology laboratory of the Johns Hopkins Hospital, through the courtesy of Dr Joseph Colt Bloodgood, director The records studied from these sources contained histories of 1,100 unselected breast carcinomas, and of these, the results in 659 cases were known for three years or more after operation

In the entire series, thirty-seven instances of cancer in both breasts were recorded (3 36 per cent) In thirteen of these, the patient presented herself with both breasts already involved, the histories in the

* Read before the Section on Surgery General and Abdominal at the Seventy Second Annual Session of the American Medical Association Boston June 1921

1 Rodman W L Diseases of the Breast Philadelphia P Blakiston's Son & Co 1908 p 183
2 Rodman W L Diseases of the Breast p 202
3 Parker Willard Cancer New York 1885 p 8
4 Judd and Sistrunk End Results in Cancer of the Breast Surg Gynec & Obst 18 7 1914
5 Lockwood Cancer of the Breast London Oxford Med Pub 1913 p 37
6 Davis B B Operative Results in 200 Breast Tumors Ann Surg 71 270 (March) 1920

majority suggesting that cancer arose in one breast and metastasized to the other, rather than that tumors arose simultaneously and independently in each breast

Of the remaining twenty-four cases, in eleven the postoperative history suggested that the second breast cancer was metastatic, on account of its appearance within a short interval of time after removal of the first breast, or its development coincidently with other metastases in the axilla on the side of the first cancer, or in other organs The interval between operation and the appearance of the cancer in the second breast in these eleven cases varied from two to thirty months, averaging twelve and one half months

In thirteen cases the cancer in the second breast presented a clinical history suggesting a new and independent neoplasm, on account of a long interval of time after removal of the first breast with freedom from other metastases, or (in two instances) a comparatively short interval, but freedom from other metastases, and cure by operation on the second breast As stated at the beginning of this paper, no discussion will be entered into as to whether these were actually new primary growths or simply late recurrences Attention is simply directed to the fact that they behave clinically as if the second tumor were primary, and the reasonable presumption is that prophylactic removal of these breasts would have saved the patients from cancer

TABLE 1—INCIDENCE OF CANCER IN SECOND BREAST BY TIME INTERVALS AFTER FIRST OPERATION*

Years After First Operation	Number of Patients Living	Number Who Eventually Developed Cancer of Opposite Breast	Per Cent of Number Living at This Interval After First Operation	
5	162	12	7.3	Of these 12 8 died of the second cancer 1 died of other causes 8½ years later 2 have been traced only a short time 1 is well 10 years after
8	96	9	9 5	Six died of second cancer 1 of other causes 1 traced short time only, 1 well 10 years after
10	60	5	8 3	Three died of second cancer 1 well 10 years after
15	22	1	4 5	

* End results traced five years or more in 659 cases

Twelve of this group of thirteen cancers which behaved as if they were primary tumors in the second breast, occurred in patients living five or more years after the first operation The numerical relation of these second breast tumors to the number of patients living at various intervals after the first operation is shown in Table 1

The expectancy of cancer of the second breast in women who live five years or more after the first breast cancer has been removed is shown in this table to be from 7 to 10 per cent In order to compare this with the expectancy in normal women, Table 2 has been constructed from the Census Bureau Reports[7] to show the expectancy of cancer of the breast in women of all ages

Thus, of all women between the ages of 25 and 29, one in fifty-eight will at some time in her life develop cancer of the breast, a percentage of 1 7 per cent It will be seen that at no period of life does the ratio rise to more than one in fifty-two, or about 2 per cent The comparison between this percentage (2 per cent, or less) and the percentage shown in Table 1 for patients in this series living from five to ten years after the first operation (7 to 9 per cent) is very striking The difference is probably even still greater than indicated here, for the reason that at the time of collecting the statistics there are a number of patients alive and well five years after the first operation who will yet in the course of time develop cancer of the second breast, thus increasing the actual percentage expectancy shown

TABLE 2—EXPECTANCY OF CANCER OF THE BREAST IN WOMEN OF ALL AGES

		Per Cent.
Of all women over 25	one in 58 dies of cancer of the breast	1 7
Of all women over 30	one in 54 dies of cancer of the breast	1.8
Of all women over 35	one in 2 dies of cancer of the breast	2 0
Of all women over 40	one in 52 dies of cancer of the breast	2 0
Of all women over 45	one in 54 dies of cancer of the breast,	1.8
Of all women over 50	one in 58 dies of cancer of the breast,	1 7
Of all women over 55	one in 65 dies of cancer of the breast	1 5
Of all women over 60	one in 75 dies of cancer of the breast	1 3
Of all women over 65	one in 87 dies of cancer of the breast	1 1
Of all women over 70	one in 97 dies of cancer of the breast	1 0
Of all women over 75	one in 113 dies of cancer of the breast	0 8
Of all women over 80	one in 128 dies of cancer of the breast	0
Of all women over 85	one in 141 dies of cancer of the breast	0 6
Of all women over 90	one in 190 dies of cancer of the breast	0 5

The records have been studied still further to see in how many cases and at what intervals following first operation, removal of the second breast might have saved later death from cancer It is, of course, impossible to decide this point with absolute certainty in any individual case When, however, a patient is free from metastasis for five or more years, develops cancer of the second breast, is operated on and in the course of from one to three years develops metastases or recurrences on the side of the second breast and dies after about the usual length of life for primary cancer the reasonable presumption is that this patient s life might have been saved by removing the second breast before cancer developed in it Certainly this would be true if the second cancer were primary, and probably the patient's life would have been saved had the second cancer been recurrent, inasmuch as other metastases developed only after an interval of time following the incidence of the second breast cancer and apparently came from it

TABLE 3—STUDY OF POSSIBLE LIFE-SAVING IN THIS SERIES BY PROPHYLACTIC REMOVAL OF SECOND BREAST AT VARIOUS TIME INTERVALS

Years After First Operation	Number of Patients Living	Number of Lives Which Would Probably Have Been Saved by Amputation of Second Breast at Time Indicated
At time of first operation no interval	649	10
3 years	257	10
5 years	162	6

Such a study of the records suggests that if both breasts had been removed at the first operation thirteen cancers and at least ten deaths might have been prevented If the patients living after a three-year interval had had their second breasts removed, then the records still suggest that ten deaths from cancer in the second breast might have been prevented After a five-year interval, this number has dropped to six possibly preventable deaths

As only 257 of the 659 patients traced were living at the end of three years, it would be necessary to

7 Mortality from Cancer and Other Malignant Tumors in the Registration Area 1914

perform but 257 breast excisions at this interval to save ten lives, therefore, if we had absolute and ideal control of our patients we could amputate 250 breasts within three years, instead of 650 at the time of the first operation and save as many lives

It is realized that removal of all second breasts, three years after the first operation for mammary cancer, is not feasible, for the reason that not all patients can be brought back to the clinic in three years, nor will many of them permit prophylactic removal of the second breast The facts presented here, however, indicate that the woman who lives five years after a complete operation for cancer of the breast is approximately four times as likely to develop cancer in the second breast as is the previously normal woman of the same age to have cancer in either or her two breasts (7 to 9 per cent expectancy against 2 per cent or less in normal women)

One of the most discouraging features brought out by this study is that the mortality of cancer in the second breast corresponds closely to that of all breast cancer—from 70 to 80 per cent Far from being put on their guard by one experience, several of the patients observed tumors in the second breast from two to nine months before coming for treatment

It would greatly simplify the problem if we could tell from an examination of the first breast removed whether the second breast is more than ordinarily subject to cancer, and this question has been investigated in the cases reported here In the first place, no significance could be attached to the type of cancer All of the cancers, both in the first and second breasts, were fully developed scirrhous or medullary cancers, which, of course, are the ordinary forms of breast cancer In the histology of the breast tissue removed with the first cancer, there is but one precancerous condition which might occur which is commonly bilateral, namely, the productive type of chronic cystic mastitis, the adenocystic breast or Schimmelbusch's disease Neither this condition nor any other suggestive frequently occurring histologic picture was found in the first breast removed in these cases, but only the slight changes of adenoma formation and dilatation of ducts and acini commonly observed in senile breasts

CONSIDERATIONS IN PROPHYLACTIC REMOVAL OF SECOND BREAST

The object of this paper is distinctly not to lay down as a surgical principle the prophylactic removal of the second breast The simple facts of the increased incidence of cancer in the second breast are sufficiently interesting to demand attention What surgical procedure these facts justify must be a matter for individual judgment We may decide that prophylactic removal of the second breast is indicated in a selected group of cases If not, we at least owe it to our patients to explain to them the increased risk they run even over normal women If they are from three to four times as likely to have cancer in the one remaining breast as is a normal woman in either of her two breasts, we should keep them at least four times as carefully under observation

With this definite understanding there are certain considerations to be presented in case we consider prophylactic removal of the second breast justified

In the first place it would obviously be poor judgment to subject every patient at the primary operation to a resection of the second breast As pointed out in this study, removal of the second breast at any time within three years of the first operation is nearly as efficient a life-saving measure as immediate excision, and by that time a large number will have died or developed other metastases from the first breast These patients would not have been benefited by excision of the second breast Only those patients who are "cured" by the first operation are we anxious to save from cancer in the second breast.

Can we form any judgment at the time of the primary operation as to which patients are going to be living and free from recurrence in three years? As is well known, the percentage of cures in patients whose axillary glands show no involvement at the first operation is nearly three times as high as in those with axillary metastasis On going over the cases of cancer in the second breast studied for this paper, we found that in 75 per cent the axilla was not involved at the first operation Therefore excision of the second breast in patients who showed no axillary involvement would include three out of four of those who would develop cancer in the second breast after an interval of from three to five years Going over the entire series of 1,100 breast cancers, we found that in only 22 per cent was the axilla free from involvement at the time of the first operation Therefore it would be necessary to excise the second breast in only one case out of five as they come to the clinic in order to prevent three fourths of the cancers in the second breast in otherwise cured patients

We believe, therefore, that if prophylactic resection of the second breast is performed, the best procedure is to determine from pathologic study whether the axilla is involved from the first breast, and in those cases in which it is not involved, resect the second breast as soon as convenient after the first operation Those patients who have axillary involvement at the first operation should be urged to return within three years and then if free from recurrence, have the second breast excised

SUMMARY

1 The patient who has had one breast amputated for cancer is, if she survives five years, from three to four times more likely to develop cancer in the second breast than a normal woman of the same age in either of her two breasts

2 The majority of cancers in second breasts, arising three or more years after the first operation, behave clinically at least like primary new growths—not like metastases from the cancer in the first breast

3 These facts demand recognition, either in the form of prophylactic removal of the second breast or in redoubled care in observation of the second breast after operation on the first

4 The records in this series suggest that if the 257 women living three years after the first operation had submitted to prophylactic resection of the second breast, twelve cancers and ten deaths from cancer in the second breast would have been prevented

5 One patient in five has no involvement of the axilla at the time of the first operation, and if these patients had their second breasts excised, three out of four cases of late cancer in the second breast would be prevented

391 Sutter Street

ABSTRACT OF DISCUSSION

DR JOSEPH C. BLOODGOOD, Baltimore This investigation is a contribution to our endeavors to increase the number of permanent cures of cancer The final conclusion, however, will not be based on the percentage of cures from surgical clinics, but on the report of the United States Census Bureau that the number of deaths from cancer is on the decrease I am informed that Mr Hoffman of the Prudential Life Insurance Company has expressed the opinion that the curve of deaths from cancer in this country is not rising, but is falling This is the first concrete evidence that the educational propaganda of the American Society for the Control of Cancer is having its effects In a recent restudy of almost 2,500 cases of cancer of the breast, we have found that the percentage of five-year cures has been exaggerated by placing among the cancers cases previously incorrectly diagnosed adenocarcinoma instead of adenoma Before this restudy our figures showed 80 per cent of five-year cures of cancer of the breast when the axillary glands were not involved This has been reduced to about 60 per cent by excluding these benign cases Kilgore has apparently demonstrated that a woman who is free from evidence of recurrence from three to five years after the complete operation for cancer of one breast runs a larger risk of cancer of the remaining breast than a woman of the same age who has had no trouble in her breasts It seems, therefore, justifiable to conclude that we should consider seriously advising women in this group to have the remaining breast removed I am confident that we need more studies similar to Kilgore's to help us to increase the number of permanent cures of cancer

DR. R B GREENOUGH, Boston The question is whether the disease in the second breast is a recurrence or a reoccurrence of cancer The figures Dr Kilgore has given would seem to indicate that a reoccurrence of cancer is relatively common Out of 639 cases of breast cancer, I found thirty-five cases showing cancer of both breasts In nineteen of these the disease in the second breast occurred only after definite signs of recurrence elsewhere, as a sequel to the first operation In other words, the second breast was involved only as part of a metastatic process In six cases a tumor of the other breast was the first evidence of a return or a reoccurrence of cancer, but in only two of these cases was a reoccurrence as late as after three years following operation and one of these patients is now living and well over three years after the second operation In five cases both breasts were involved at the time of the first operation, and two of these patients are now well and free from recurrence seven and seventeen years after operation There were three cases of involvement of both breasts that were considered inoperable Thus, the tentative proposal of Dr Kilgore to remove the second breast as a routine measure at a period of three years after the first operation would have benefited only two of these 639 patients, and of these two, one was successfully treated by operation as soon as the positive indication was obtained Dr Kilgore deserves great credit for presenting so forcibly the necessity for repeated and periodic reexaminations of patients after operation for cancer As a fact the treatment of such a case is only begun at the first operation This applies with equal force to all the forms of malignant disease which are susceptible of treatment by radical operation Such a patient should never be discharged and the importance of periodic examination should be emphasized as a matter of common precaution

DR. M RUBEN, Stockholm, Sweden I have seen a case of multiple primary carcinoma of the pylorus and of the gallbladder, in which I operated Looking up the literature I found that the frequency of multiple carcinoma given in the different statistics is from 0 3 (by Riechmann) up to 2 per cent (Feitchcufeld) These figures show that the possibility of two different carcinomas in same patient is something for the surgeon to have in mind Some years ago I saw the Swedish surgeon Borchius performing an amputation of the right breast, and at the same time excise an "adenoma" on the left side Some days later he was compelled to do a radical operation on the left side also because after careful microscopic examination, the excised adenoma was found to be an independent primary carcinoma From 1898 to 1915, 297 patients were operated on Only two died, one from pulmonary embolism, and one from decompensated heart, a mortality of 0 67 per cent Of the 295 surviving, 256 could be traced Of these 29 2 per cent were living after three years, 23 per cent after five years, 12 1 per cent after ten years, and two patients were living after twenty years Of the seventy-five cases free from recurrence after three years, twenty-two (29 3 per cent) had metastases in the axillary glands at the time of operation Of the thirty-one free for more than ten years five (16 1 per cent) were similarly affected at the time of operation That shows that prognosis, even in these cases, is not very bad During the last two years systematic roentgen-ray treatment has been given before as well as after operation

DR ALSON R. KILGORE, San Francisco Dr Greenough has suggested that cancer in the second breast may sometimes be retrograde metastasis from recurrence in the axilla on the side of the first cancer He has seen two such cases The percentage incidence of cancer in the second breast is frankly lower in Dr Greenough's series than in mine, yet, considering the number of five-year cures in his series, the two cases of second breast cancer represent an incidence still twice or more as great as in normal women I want to repeat again that I am not advocating prophylactic removal of the second breast My object was to present the facts as I found them and certainly these facts deserve serious consideration and demand careful postoperative observation with second breast cancer in mind One of the most discouraging facts brought out in the study was that the mortality of second breast cancer was nearly as high as in all cases of breast cancer Far from being warned by one experience, many of these patients delayed from three to nine months after the onset of their second breast cancers, and the mortality was about 80 per cent Out of a total of 1,100 patients, twelve cases of second breast cancer does not seem like a large number to get excited about, but we must remember that if we had succeeded in making five year cures of the entire 1 100 which is our ultimate object, and the percentage incidence had remained the same in them as in the actual five-year cures of this series, seventy or more patients would have developed cancer in the second breast

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END-RESULTS OF PRENATAL CARE*

ALFRED C BECK, M D
BROOKLYN

This study of the results of prenatal care is based on 1,000 consecutive deliveries All of these patients were supervised during pregnancy by the ante partum clinic and were subsequently confined either in their homes or in the hospital by the obstetric service of the Long Island College Hospital Before discussing the results, I shall briefly describe the plan of organization and the prenatal routine of that institution (Table 1)

PLAN OF ORGANIZATION

Since good judgment in obstetrics is as essential in the prenatal clinic as it is in the delivery room, the attending obstetrician of the hospital is also chief in the ante partum dispensary His assistants are the resident and intern obstetricians The same men, therefore, do all of the hospital and prenatal work, and as a result, our ante partum clinic is as intimately connected with the hospital maternity department, as is the delivery room This unification of departments not only avoids friction, but gives the patient the benefit of the attending obstetrician's opinion long before she falls into labor

* Read before the Section on Obstetrics Gynecology and Abdominal Surgery at the Seventy Second Annual Session of the American Medical Association Boston June 1921

The medical personnel is assisted by three graduate nurses, two of whom are members of the Visiting Nurses' Association These nurses devote all of their time to our work, alternating daily between service in the clinic and follow-up work in the patients' homes

TABLE 1—PLAN OF ORGANIZATION OF THE LONG ISLAND COLLEGE HOSPITAL MATERNITY SERVICE

	Prenatal Clinic	Maternity Ward
Intern	Physical examinations Abdominal palpation	Delivery of normal cases Ward routine
Resident	Pelvic measurements Abdominal palpation	Abnormal deliveries Supervision of ward
Chief of Clinic	Histories Verifies measurements of contracted pelves Final instructions to all patients	Major operations Supervision of all patients

PRENATAL ROUTINE

History—At the time of the patient's application for care in the prenatal clinic, a careful history is taken The presence or absence of tuberculosis, insanity or hemophilia in her family is ascertained We then inquire as to the possibility of her having had rickets, scarlet fever, diphtheria, rheumatism, syphilis, gonorrhea, cardiac disease, nephritis or a gynecologic operation Her previous pregnancies are investigated from the standpoint of toxemia, hemorrhage and infection Each labor is considered separately, and abnormal ones are noted Under miscarriages are recorded the date, the duration of the pregnancy and the cause An effort is made to ascertain the size of the previous children at birth and their health, subsequent to delivery If any children have died, their age and the cause of death are noted From the date of the last menstruation and quickening, the expected date of confinement is estimated

Physical Examination—Following the taking of the history a thorough physical examination is made This includes an examination of the heart, lungs, breasts, abdomen, vagina and extremities, urinalysis, blood pressure determination and pelvimetry Blood for the Wassermann reaction is taken from each patient

Instructions to Patients—If nothing abnormal is anticipated and the patient is a multipara, she is informed that she will be cared for during confinement in her home All primiparas and patients with anticipated abnormalities come to the hospital for delivery

Before leaving the clinic, each patient receives a pamphlet containing instructions as to the hygiene of pregnancy In simple language, the following items are discussed the care of the mouth and teeth, diet, bathing, rest, exercise, clothing, sexual intercourse, the care of the bowels and the schedule of return visits with directions for collecting and measuring the specimen of urine which is to be examined In addition, the things needed for a delivery in the home are noted, and a list of necessities for the baby is given

Home Visits by the Prenatal Nurse—Within a few days, the patient's home is visited by the nurse who was present during her examination If our instructions were not clearly understood, the nurse carefully explains whatever is necessary, and in addition renders such social service as is possible

Return Visits—During the first five months, return visits are made monthly These are increased to biweekly during the sixth and seventh months, and weekly during the last two months About 80 per cent of our patients return at the specified time Those who do not come back are seen by the visiting nurses, who make monthly calls on each patient

At each of these return visits, the symptoms of toxemia and hemorrhage are considered The blood pressure is taken and the urine examined One month before the estimated date of confinement, an abdominal examination is made to determine the presentation, size and condition of the fetus

Several times before delivery the patients return to what are called the "show clinics" These are held twice weekly and consist of demonstrations by the nurses

Figures 1 and 2 are a reproduction of a specimen record from the prenatal clinic

THE LONG ISLAND COLLEGE HOSPITAL
DEPARTMENT OF OBSTETRICS
No.
PRENATAL RECORD

Name JOHNSON, MARY Date MAR 3, 1921.
Address 121 BUTLER STREET Near COURT ST. Floor 2 Room R
Age 24 Nation U.S. Color B W Para 2 Occupation H W
Previous Admissions NONE
By whom referred FORMER PATIENT Date of marriage JUNE 1918
Family History NO INSANITY ? TUBERCULOSIS OR HEMOPHILIA
Personal History ~~Rickets, Scarlet Fever Diphtheria, Rheumatism~~ Syphilis Gonorrhoea Pelvic Trouble, Heart, Lungs, ~~Kidneys Operations~~
Previous Obstetric History ~~Vomiting Headaches Oedema~~ Hemorrhage ~~Eclampsia~~ Infection
Labors {normal FIRST PREGNANCY TERMINATED SPONTANEOUSLY
abnormal AT THE SEVENTH MONTH STILL BIRTH MACERATED FETUS
Miscarriages NONE
Children—Weight at birth SMALL Age of oldest ---- Age of youngest -- No. Dead 1
Cause of death STILL BORN, MACERATED, SEVENTH MONTH
Menstrual History—Type 28 day Duration 5 DAYS Pain NONE First 14 YR
LAST MENSTRUATION Sept. 12, 1920 Quickening 4½ MONTHS
Estimated Date of Confinement JUNE 19, 1921.
EXAMINATION By Whom DR. BECK
Heart Normal in size, no murmur, sounds clear.
Lungs N.C.
Breasts LARGE Nipples GOOD Colostrum PRESENT
Abdomen ~~FLUID~~ Striae MANY
Foetal Movements PRESENT Contractions PRESENT

Date	Pres. Posit.	Foetal Heart	Size of Foetus	Height of Fundus	Engagement
MAR 3, 21	????	L L Q 140	6½ MO.	17 cm.	NONE
MAY-19 '21	L O A	L.L.Q.	36 wks	24cm	NONE

Measurements
Interspinal 23 cm. Intercristal 25 cm. Intertrochanteric 29 cm.
External Conj 16½ cm. Diagonal Conj 9 cm Bischial 8½ cm.
Diagnosis of Pelvis GENERALLY CONTRACTED

Fig 1—Reproduction of specimen record from prenatal clinic of the Long Island College Hospital

SPECIAL ROUTINE DURING THE FIRST TRIMESTER

During the first trimester, an effort is made to anticipate and prevent abortion and excessive nausea and vomiting

Nausea and Vomiting of Pregnancy—Nausea and vomiting of pregnancy are minimized by giving special care to the diet and elimination Patients are urged to drink at least 8 glasses of water daily The bowels are regulated by the employment of mild laxatives Hyperacidity is combated by the use of antacids, and a diet rich in carbohydrates is given These simple measures, when used prophylactically, have greatly diminished the nausea and vomiting in our cases Dur-

ing the last nine years, it has been necessary to refer only one patient to the hospital from the prenatal clinic because of hyperemesis In her case, the presence of a multiple pregnancy was a causative factor, and she subsequently gave birth to triplets

Abortion—With the exception of the correction of misplacements, very little is accomplished in the prophylaxis against the underlying or predisposing causes of abortion All patients are warned of the common exciting causes of this condition They are urged to avoid exertion, strap-hanging in street cars and sea bathing, and are told to remain in bed whenever a blood stained vaginal discharge is observed Because of our inability to eliminate the predisposing causes and the patient's difficulty in avoiding the exciting causes, our results have been very discouraging

SPECIAL ROUTINE DURING THE SECOND TRIMESTER

In our experience, syphilis, toxemia and cardiac disease have been responsible for most of the interruptions of pregnancy during the second trimester I shall, therefore, outline our routine in each of these conditions

Syphilis—We are unable to obtain a history of the common symptoms of syphilis in most of our patients who are afflicted with this disease, therefore, blood for the Wassermann test is taken from each applicant to our clinic at the time of her first visit If the Wassermann reaction is positive, it is repeated in order that the possibility of laboratory error may be eliminated Whenever the repeated Wassermann reaction is positive intensive treatment is instituted This consists of weekly intravenous injections of arsphenamin and intramuscular injections of mercury for six weeks, followed by six weekly injections of mercury If after these six arsphenamin and twelve mercury injections, the Wassermann reaction is still positive, a second similar course of the same drugs is given We not only have no fear of causing a miscarriage or premature labor by this procedure, but we believe that we have prevented the latter in many cases by prompt and active treatment Thirty cases of syphilis are included in the series herein analyzed One of these terminated in a stillbirth, one infant died within twenty-four hours after birth, and one died of pneumonia in its seventh week The remaining twenty-seven are living and doing well, only six of them having shown any evidence of syphilis

Toxemia—In the diagnosis of toxemia, we depend on the urine findings the blood pressure and the usual symptoms—headache, vomiting, edema and visual disturbances Whenever this condition is suspected, our patients return daily for observation until we are able to tell from which type they are suffering In the slowly progressing type, we are able to keep them relatively free from symptoms by the use of a low protein or milk diet and increased elimination During the last weeks of pregnancy, these patients are admitted to the maternity ward where daily blood pressure and albumin determinations are made, in addition to weekly blood chemistry observations We seldom have any anxiety concerning the immediate maternal result in this group Occasionally, however, the infants are stillborn At times we have felt that a warning of the approaching death of the fetus was given by a sudden increase in the blood pressure and albuminuria In the hope of saving the infant, it, therefore, is our practice to induce labor in these cases in the last few weeks, whenever this sudden increase is observed

In the rapidly progressing type, the patients are sent to the hospital at once Eliminative measures are continued, but in the great majority of cases no improvement is noted If, in spite of treatment, the blood pressure and albuminuria increase and the symptoms progress in severity, the pregnancy is terminated

Thirty-seven cases of toxemia are included in this study None of these reached the stage of eclampsia, and all of the mothers recovered Four infants were stillborn

Cardiac Disease—The department of internal medicine cooperates with us in the care of all patients with cardiac disorders Under their supervision, cardiac

Vaginal Examination

Perineum — Intact / Lacerated — Cystocele / Rectocele

Cervix — Condition: Intact / ~~Lacerated~~ — Position: Ant. / Post — Consistency: Soft / ~~Firm~~ — Portio: Effaced / Intact — Ballottement: PRESENT / ~~ABSENT~~ — Secretion

PATIENT HAS NO PRIVATE PHYSICIAN

Occupation of Husband LABORER Wages $ 18 Total income $ 18

Rent $ 15 per month 2 Rooms — No. in Family 2

Promises to Pay $ 000

Date 1921	3/3	3/7	3/14	21	28	4/4	4/11	4/18	4/25	5/2	11	19	26
Wasserman	4 +	4 +											
Vomiting	0		0		0	0	0	0	0	0	0	0	0
Headaches	0		0		0	0	0	0	0	0	+	0	0
Oedema	0	WASSERMAN REPEATED	0		0	0	0	0	0	0	0	0	0
Visual Disturb.	0		0		0	0	0	0	0	0	0	0	0
Bowels	OK		OK		OK	OL	OK	OK	OK	OK	OK	OK	OK
Hemorrhage	0		0		0	0	0	0	0	0	0	0	0
Pulse	90		86		84	86	88	84	86	86	88	84	86
Blood Pressure	100		95		105	95	100	105	110	95	110	120	115
Urine S G	1018		16										
Reaction	Acid												
Albumen	0												
Sugar	0												
Acetone	0												
Casts	0												
Blood	0												
Medication	-		ARSPHENAMIN MERCURY		ARSPHENAMIN MERCURY	ARSPHENAMIN MERCURY	ARSPHENAMIN MERCURY	ARSPHENAMIN MERCURY	MERCURY	MERCURY	MERCURY	MERCURY	MERCURY
Name of Doctor	B												

Visited by Nurse Miss R Date 3/9 Statement of social condition { Verified / ~~Not Verified~~

Report of Nurse PROMISES TO RETURN FOR ARSPHENAMIN

Fig 2—Reproduction of reverse side of record.

tonics are prescribed Warning against exertion is repeatedly given, and rest in bed one week out of every four is urged Should dyspnea occur the patient is brought to the hospital In those cases that are well compensated, it is our custom to allow the pregnancy to go to term irrespective of the lesion Delivery usually is spontaneous under morphin and scopolamin In the event of a break in compensation, medical treatment is employed until sufficient improvement is obtained to permit of the termination of the pregnancy In these cases, we prefer to perform a cesarean section under gas anesthesia whenever possible, in order that sterilization may also be accomplished

SPECIAL ROUTINE DURING THE LAST TRIMESTER

During the last trimester, in addition to increased watchfulness for early symptoms of toxemia, our efforts

are directed toward the prophylactic care of the breasts, the relief of pressure symptoms, the prevention of premature labor and the recognition of abnormal presentation and its causes

Routine Care of Breasts.—Eight weeks before the expected date of confinement, prophylactic care of the breasts is begun. This consists of the application of liquid petrolatum to the nipples after a careful preliminary cleansing with soap and water. As most of our patients live in the tenements where ordinary cleanliness is absent, the details of this technic are carefully demonstrated by the nurses.

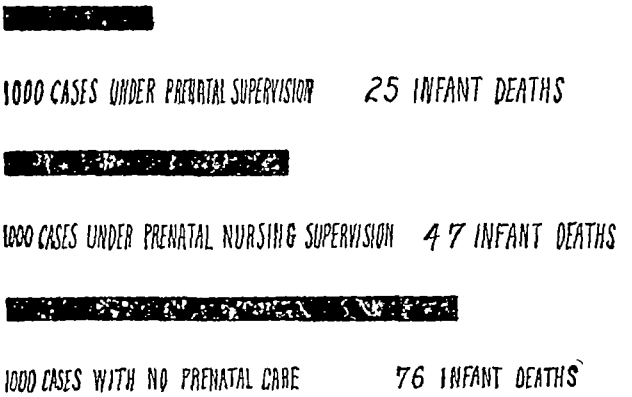


Fig. 3.—Infant mortality in three series of cases.

Pressure Symptoms.—Our nurses aid materially in the relief of the distressing pressure symptoms by furnishing, whenever possible, proper abdominal supporters and correcting faulty habits of dress.

Premature Labor.—In addition to receiving the printed instructions concerning the hygiene of pregnancy, the patients are repeatedly advised by the visiting nurses of the possibility of premature labor whenever their habits are faulty. This is work that must be done in the homes, and good results can be accomplished only by those nurses who can gain the confidence of the patients. We ascribe the great diminution in premature deliveries largely to the conscientious efforts of our prenatal nurses.

TABLE 2.—ANALYSIS OF ONE THOUSAND CONSECUTIVE CASES *

CONTRACTED PELVIS

	Number
Generally contracted	36
Flat	27
Funnel	43
Total	106
Diagonal conjugate 10.5 cm. or under	20
Bisischial 7.5 cm. or under	14

* These were the contracted pelves which were observed in the series of 1,000 cases, not a series of 1,000 contracted pelves. The same is meant in the headings of the following tables.

Abnormal Presentation.—Four weeks before term, the presentation, size and condition of the fetus are determined by abdominal examination. Breech and transverse presentations are corrected, whenever possible, by external version. If the abnormal presentations recur, we insist on hospital care during confinement. Patients with marked obliquity of the uterus are instructed to lie on the side which is opposite the obliquity from the onset of labor. If a patient has a pendulous abdomen or an excessive amount of amniotic fluid, the possibility of an abnormal presentation or prolapse of the cord is considered, and she is told to remain in bed throughout labor.

ANALYSIS OF CASES

One hundred and six of the patients included in this series had contracted pelves. While most of these were slight, in twenty the diagonal conjugate was 10.5 cm., or less, and the bisischial was 7.5 cm., or under, in fourteen. Table 2 shows the frequency of the several types encountered.

TABLE 3.—ANALYSIS OF ONE THOUSAND CONSECUTIVE CASES

CONDITIONS COMPLICATING PREGNANCY AND LABOR

	Number
Mitral stenosis	4
Mitral regurgitation	3
Syphilis	30
Toxemia	37
Placenta praevia	2
Premature separation of the placenta	2
Twins	4
Large fibroids of the uterus	3

Complications of pregnancy sufficiently grave to influence the end-results were observed in seventy-seven cases. Of these, toxemia, syphilis and cardiac disease were the most common. In Table 3 these conditions with their frequency are enumerated.

Table 4 gives the various abnormal presentations. In spite of our efforts to prevent their occurrence,

TABLE 4.—ANALYSIS OF ONE THOUSAND CONSECUTIVE CASES

ABNORMAL PRESENTATION

	Number
Breech	27
Face and brow	6
Transverse	4
Prolapsed cord	2
Complex	1
Total	40

abnormal presentations were observed in forty cases, an incidence of 4 per cent. While this high frequency does not look well from the standpoint of prevention, our prenatal work was sufficiently accurate to enable us to anticipate most of them, and as a result led to hospital care in all but four of the forty deliveries.

Operative interference was required in only sixty cases. The types of operation and their frequency are shown in Table 5. In addition to the procedures enumerated, median perineotomy was frequently performed in primiparas, especially if the fetal heart showed signs of asphyxia. All of these operations were performed in the hospital under the best possible conditions. The low incidence in the use of forceps is striking and shows how rare the maternal and fetal indications for this

TABLE 5.—ANALYSIS OF ONE THOUSAND CONSECUTIVE CASES

OPERATIONS

	Number
Forceps	22
Version	5
Introduction of bag	4
Conversion of face to vertex	2
Perforation of after coming head	1
Cesarean section	8
	Per Cent
Incidence of forceps	2.2
Incidence of version	0.5
Incidence of cesarean section	0.8

procedure really are, when median permeotomy is added to the obstetrician's armamentarium

The maternal morbidity and mortality are shown in Table 6 Seven patients had suppurative mastitis, and in fifty-nine the puerperium was febrile, an incidence of 5 9 per cent Following the last epidemic of influenza, our maternity ward was visited by an epidemic of puerperal infection Many of the cases of febrile puerperium occurred at that time Patients who enter the hospital subsequent to prenatal supervision seldom have a temperature over 99 F This absence of morbidity is due no doubt to the fact that our antepartum work eliminates the necessity of vaginal examinations Unless operative interference is required the progress of labor in these is followed solely by abdominal and rectal examination

TABLE 6—MATERNAL MORBIDITY AND MORTALITY*

	Number
Morbidity	
Mastitis	7
Febrile puerperium	59
Pneumonia	1
Mortality	
Pneumonia	1
Puerperal infection	3
Total	4 or 0 4%

* In 4 500 consecutive cases similar to and including this 1 000 seven maternal deaths occurred, an incidence of 1 to 643 cases (0 1o per cent)

Our maternal mortality, unfortunately, was higher than usual in this series One fatality was due to influenzal pneumonia and three occurred during the epidemic of puerperal infection In 4,500 consecutive cases, similar to, and including, the thousand which are analyzed in this paper, only three mothers died, in addition to the four above recorded, an incidence of one death in 643 cases

Prenatal supervision leads to the anticipation of those abnormalities which are best cared for in the hospitals These conditions are treated early in labor at a time

TABLE 7—ANALYSIS OF ONE THOUSAND CONSECUTIVE CASES

INFANT MORTALITY

		Number	Per Cent
Stillbirths		19	1 9
Breech—large head	3		
Placenta praevia	1		
Accidental hemorrhage	2		
Toxemia	4		
Syphilis	1		
Full term—macerated	3		
Full term—not macerated	1		
Second twin macerated first living	2		
Version—cord complication	1		
Full term—cord around neck	1		
Deaths of infants under 14 days		6	0 6
Acrania died three hours	1		
Premature died four days	1		
Full term died one day (syphilis)	1		
Full term died four days	2		
Umbilical hemorrhage	1		
Total		25	2 5

when the operative procedures accompanied by least risk are applicable, and as a result, maternal morbidity and mortality are reduced to the minimum

As a result of the progressive increase in the efficiency of our prenatal organization and routine, the infant mortality grows less each year Table 7 gives the stillbirths and the infant deaths which occurred in this series Nineteen, or 1 9 per cent, of the pregnancies terminated in stillbirths and six infants died under fourteen days, a mortality of twenty-five, or 2 5 per cent That this low rate is due largely to prenatal care is shown by a comparison of the three series of cases recorded in Table 8

The first is the series reported in detail in this paper (Table 7) The second was furnished to me by the Visiting Nurses' Association and consists of patients that were under the prenatal supervision of their nurses

TABLE 8—COMPARISON OF THREE SERIES OF CASES

	Cause of Death										
	Congenital Defect	Prematurity	Trauma	Syphilis	Toxemia	Miscellaneous	Unknown	Hospital	Physician	Midwife	Total
Series I*											
Stillbirths			3	1	4	5	6	19			19
Infant deaths	1	1		1		1	2	6			6
Total	1	1	3	2	4	6	8	25			25
Series II†											
Stillbirths		3	12	1	2		7	8	15	2	25
Infant deaths	5	5	1	1	2		8	11	8	3	22
Total	5	8	13	2	4		15	19	23	5	47
Series III‡											
Stillbirths		6	12		3		14	4	26	5	35
Infant deaths	8	15	8				10	9	28	4	41
Total	8	21	20		3		24	13	54	9	76

* Series I Infant mortality in 1 000 cases under prenatal supervision of the Long Island College Hospital

† Series II Infant mortality in 1 000 cases under nursing supervision of the Visiting Nurses Association with no systematic medical supervision

‡ Series III Infant mortality in 1 000 cases in which there was no prenatal care

for periods of from one to seven months Systematic medical supervision was lacking in this group

The third series consists of 1,000 patients that received less than one month of prenatal supervision by their nurses or none at all Systematic medical attention likewise was not given The infant mortality in these three series was 25 per thousand, 47 per thousand, and 76 per thousand, respectively A graphic representation of this comparison is shown in Figure 3

20 Livingston Street.

ABSTRACT OF DISCUSSION

DR JOSEPH B DE LEE, Chicago We have tried to take care of women from the very earliest months of pregnancy with a view of preventing abortion I agree with Dr Beck that it is almost impossible to prevent abortions The habitual aborter is the bane of the obstetrician At first I was very sorry that we could not prevent all abortions When the embryologist showed that the majority of these aborted ova were abnormal either microscopically or macroscopically we did not regret this conservative act of nature We try to make routine Wassermann tests Let me warn you from deducing from a positive Wassermann reaction that a woman is syphilitic Tell her the Wassermann reaction is positive but that that does not mean she has syphilis, since during pregnancy the reaction is equivocal I do not underestimate the value of the Wassermann test Within five years we shall have to revaluate this test Regarding a standard of morbidity The doctor said he had fifty-nine cases of morbidity in 1,000 cases, 5 9 per cent of puerperal women had fever What we should have is a committee appointed similar to that of the British Medical Society to establish a standard of morbidity At the Chicago Lying-In Hospital, our standard of morbidity is a temperature of 99 F My own standard is 98 6 Any woman with a temperature above 98 6 is morbid The British standard is 100 6 It is going to be very difficult to establish a standard of morbidity Another point I wish to bring out is the low fetal mortality of these cases 2 5 per cent. mortality in children that were

born after the seventh month That is a wonderful result, probably unequaled It certainly is not equaled by that practitioner who turns the babies around and draws them out by the feet when nature started them by the head His mortality was nearly 8 per cent Now, if a gross mortality of 2 5 per cent can be accomplished by means of intelligent antenatal care and by means of conservative—we might say old-fashioned—methods of obstetric practice, we see no reason for introducing new methods carrying 8 per cent mortality

DR EDWARD A SCHUMANN, Philadelphia One of the great problems underlying antenatal hygiene, in our great centers of population, is that of the young woman illegitimately pregnant, with a low standard of mentality, and afflicted with venereal disease In Philadelphia we have just established a prenatal clinic at the Philadelphia General Hospital, which I think is destined to begin at least to solve this problem The clinic is conducted much as any other prenatal clinic, but there is in constant attendance on clinic days a psychiatrist and a technician from the laboratory of the hospital Any case presenting the slightest evidence of mental abnormality is studied coincidently and concurrently by the psychiatrist and the obstetrician, the necessary laboratory work is done We get a report quickly The institutional care in mental deficiency cases can be carried on coincidently with ordinary prenatal care We hope great things for this clinic, although not much has been accomplished yet

DR HUGO EHRENFEST, St Louis The majority of physicians are more interested to know how far these very interesting rules for proper prenatal care as carried out by public clinics can be applied to private practice Of course, there are distinct differences in the prenatal care of the private patients, however the general principles as laid down by Dr Beck should be followed Under present housing conditions people are forced more and more to seek hospital accommodations for confinement With the limitation of such accommodations in all larger cities, obstetric patients are forced to apply to their physician rather early in pregnancy Probably 75 per cent of my patients appear in the office about the third or fourth month of pregnancy This is a factor which has some very important bearing on present day successful prenatal care also in private work Outside of this rather beneficial effect on proper prenatal care, I have observed another influence of the housing problem, and that is on the development of hyperemesis Young married couples are crowded into the so-called efficiency apartment, one or two rooms with a kitchenette off the supposed-to-be dining room These women at the beginning of a pregnancy are forced to do their own cooking and smell the kitchenette odor while they are eating I think that this represents an interesting and important factor in exaggerated vomiting now observed by me in more cases than ever before It is a difficult problem to handle I have made it a routine as soon as these patients begin to vomit to put them in a hospital under the care of the dietitian Occasionlly I used a little bromid In the main, all we have to do is to serve these patients very small meals at short intervals It is remarkable how quickly they will get over the nausea and begin to eat We test them out on bigger meals and let them go home This, to my mind, is a very interesting observation in view of the unsettled state of the nausea question In private practice the Wassermann test as a routine is neither desirable nor necessary

DR. ALFRED C BECK, Brooklyn Concerning the Wassermann reaction, our experience has been similar to that of Dr De Lee Recently I drew attention to the fact that in all probability we were being misled even in normal pregnancy cases by the Wassermann test It is hard to say what we should do with the patients who have two positive Wassermann reactions and no other evidence of syphilis Is it desirable to take the risk of having a child born with syphilis because we dislike to use intensive treatment in such cases? Dr Schumann's suggestion is a very good one, and I hope that we may be able to get the cooperation of the department of psychiatry in our cases With regard to nausea and vomiting In all my work with clinic cases, I have noticed that the tendency toward this condition is very much less than with the private patients So that while we have not had these cases in the clinic, I certainly have had them in my private practice But when these measures are used prophylactically, it does not cut down the incidence of the really troublesome cases

THE REMOVAL OF BILE AND BLOOD FROM THE URINE

IN PERFORMING THE PHENOLSULPHONEPHTHALEIN TEST OF RENAL FUNCTION *

C SIDNEY BURWELL, M D
AND
CHESTER M JONES, M D
BOSTON

As the phenolsulphonephthalein test for estimating renal function is based on a colorimetric determination, it follows that foreign coloring matter in the urine introduces an error, and that any considerable amount of coloring matter vitiates the test Bile and blood are the two common sources of color in the urine that render the method inaccurate Rowntree and Geraghty [1] observed that the urine could be rendered free of bile pigments, without the loss of phenolsulphonephthalein, by the addition of basic lead acetate, and subsequent filtration The addition of basic lead acetate, however, does not precipitate hemoglobin from aqueous solution,[2] and no method has been as yet suggested which makes the test serviceable in the presence of hemoglobin

The method here described does, however, remove both bile and blood It consists in the precipitation of bile and blood by zinc acetate, and their removal by filtration This procedure permits practically 100 per cent of the phenolsulphonephthalein to remain in the filtrate This modification of the usual phenolsulphonephthalein test is extremely simple, and should prove particularly applicable to cases of choluria and hematuria in which a study of the renal function is indicated

The modified test is thus performed Phenolsulphonephthalein solution (1 c c) is injected into the deltoid muscle in the usual manner, and the urine collected after the usual interval of two hours and ten minutes This specimen of urine is diluted up to 500 c c with tap water To 20 c c of this diluted urine are added 20 c c of a saturated alcoholic solution of zinc acetate, which precipitates out bilirubin and hemoglobin Red cells are carried down with the precipitate Filtration yields a clear solution, now free of bile pigments and hemoglobin Twenty cubic centimeters of this clear filtrate is made alkaline with 5 c c of saturated sodium hydroxid solution to bring out the full color of the dye, and made up to 40 c c with tap water This solution is clear and is read directly against a known standard solution of phenolsulphonephthalein In order to correct for dilution, the percentage reading is multiplied by 2

In order to establish the accuracy of this method it was necessary to show that the phenolsulphonephthalein was not removed by treating the urine with zinc acetate, and that bile and hemoglobin were entirely removed The following determinations were accordingly made

* From the Medical Clinic of the Massachusetts General Hospital

1 Rowntree L G and Geraghty J T An Experimental and Clinical Study of the Functional Activity of the Kidneys by Means of Phenolsulphonephthalein J Pharmacol & Exper Therap 1 579 1909 1910

2 Hammarsten O, and Hedin S G A Text Book of Physiological Chemistry New York 1914 p 281

Known amounts of phenolsulphonephthalein were added to (1) distilled water, (2) normal urine, (3) urine from deeply jaundiced patients, (4) normal urine to which bile had been added, (5) urine from patients with marked hematuria, and (6) normal urine to which laked and fresh blood had been added The method as described above was applied to each preparation, with these results

1 In each case the loss of phenolsulphonephthalein, when the final filtrate was compared with a standard in the Duboscq colorimeter, was so small as to be negligible

2 In those preparations containing bile, all traces of bilirubin had been removed, as demonstrated by the iodin test for bile

3 In those preparations containing blood, all traces of hemoglobin or hemoglobin derivatives had been removed, as shown by the absence in the final filtrate of characteristic spectroscopic absorption bands

4 All the resulting filtrates were clear

5 In every case the final filtrate could be read directly and satisfactorily against standard solutions of phensolsulphonephthalein

DIAGNOSTIC AND THERAPEUTIC POINT IN RETROCALCANEAN BURSITIS

A L NIELSON, M D
HARLAN, IOWA

Retrocalcanean bursitis was first described by Albert,[1] in 1893, under the term achillodynia He reported a number of typical cases, but did not determine the pathology of the condition Rossler,[2] in 1895, by operation and dissection, found the true cause of the disease to be an inflammation of the bursa lying between the insertion of the Achilles tendon and the tuberosity of the os calcis

This bursa is subject to the usual affections of bursae in general Of special infections, tuberculosis occurs, and when it does occur, it extends to the bone quite readily, owing to the thinness of the bursal wall in its anterior and upper aspects Gonorrheal infection attacks this bursa, as do rheumatic infections In chronic infections of the bursa, there is a thickening of the bursal endothelial lining There may be cartilaginous hypertrophy and periostitis, with formation of exostoses Effusion is rare Direct infection by puncture wounds may occur

The causation of disease of this bursa may be classified as (1) functional, (2) traumatic and (3) bacterial Overuse of the foot, too much walking the trauma incident to pressure of shoes, usually too short shoes, are etiologic factors in most cases Bacterial infection is chiefly metastatic, the disease being, on this account, very often bilateral

Pain is localized at the junction of the Achilles tendon and the os calcis This pain is only on motion, rest relieves, and there is more comfort with the foot everted and the leg rotated outward There may be tenderness over the bursa, and often there is an appreciable swelling or a doughy mass on each side of the Achilles tendon I wish particularly to emphasize a diagnostic point which is also valuable as a therapeutic measure This was suggested by J B Murphy[3] The pain in disease of this bursa is due to the pinching of the inflamed and enlarged bursa, between the Achilles tendon and the os calcis, on flexion of the ankle This is logical, and is proved by the fact that removing this pressure on the bursa, by rest, resection of the bursa or by any other means will relieve the pain Then, if in any suspected case removal of this pressure relieves the pain, we may conclude that retrocalcanean bursitis is the condition with which we are dealing This is accomplished by putting the patient on high heels, mechanically increasing the distance between the tendon, just above its insertion, and the os calcis, thus giving more room to the bursa and preventing the pinching of the bursa between tendon and bone, as occurs in ordinary flexion of the ankle I have had a three-fourths inch rubber heel fitted on the ordinary low-heeled shoes, without removing any of the leather heel Roentgen-ray findings are negative in the absence of exostoses

Treatment of this condition, aside from the foregoing method, is surgical removal of the bursa The presence of long continued inflammation, cartilaginous bodies, or exostoses require operation Careful fitting of shoes is necessary to prevent pressure of the shoe on the heel over the bursa Local treatment is of little value Robert Jones[4] reports results with actual cauterization of the bursa, by inserting a heated needle into the bursa Various injections into the bursa have been tried

REPORT OF CASE

History—B K a boy, aged 11, examined Feb 1 1921, whose family history was negative and who had had measles mumps recurrent tonsilitis for five years, tonsillectomy one year before, and several attacks of bronchitis during the last four winters, began noticing pain, ten months before I saw him, in the left heel on walking The pain gradually became more severe, until it almost prevented him from walking It did not bother when the feet were at rest Under a diagnosis of suspected tuberculosis of the os calcis, he was kept off his feet for about five months On beginning to walk again the pain recurred Two months before I saw him a similar pain began in the right heel

Physical Examination—The boy was fairly well nourished The facies suggested adenoids Roentgen-ray examination revealed apparently a cyst in the anterior part of the os calcis of the left foot The heel and the right foot were negative An irregular shadow just apart from the lower border of the os calcis helped to make the former diagnosis of probable tuberculosis This shadow was the epiphysis of the os calcis which appears about the age of 10 years and unites with the body of the bone at about 15

Treatment and Course—A three-fourths inch heel was added to the ordinary heel of the shoes Immediately the patient was free from pain on walking and has continued so He now goes to school, and is as active as the average boy of his age, with no trouble with the heel There is still, four months after beginning the raised heels, slight tenderness on pressure over the left bursa, and when walking barefoot he notices pain in the left heel The right heel gives no symptoms even without the raised heel

1 Albert E Achillodynie, Wien med Presse 34 41-43 1893
2 Rossler Zur Kenntniss der Achillodynie Deutsch Ztschr f Chir 52 274-291 1895
3 Murphy Clinics 4 505 (June) 1915
4 Jones Robert Diseases of the Bones and Joints

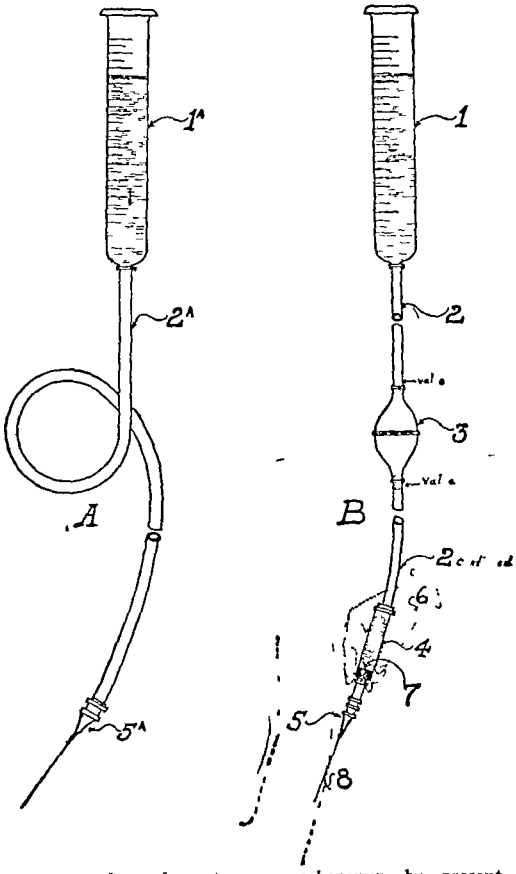
Organization of Hospital Social Service—It is desirable that the fundamental principles of function, policy and organization of social service in hospitals and dispensaries should receive the official endorsement of national bodies concerned with these fields of service Uniform consistent and unretarded development will thus be promoted, and hospitals entering into social service activities will find available guidance.—*Hospital Social Service* 3 7, 1921

Clinical Notes, Suggestions, and New Instruments

MODIFICATION OF GRAVITY METHOD OF ADMINISTERING ARSPHENAMIN

SPENCER G GILL, A B, M D, NORFOLK VA

This method has been gradually evolved after experimentation with the gravity method of arsphenamin administration It has proved satisfactory in clinical administration of arsphenamin where there are many cases to treat in a short length of time In a series of 1,000 treatments by this method, we have had less trouble in entering small veins, the reactions have not been more severe than in other forms of administration, and the results of treatment have been as satisfactory With this apparatus we inject safely from 100 to 120 c c. of arsphenamin solution, with an average length of time of two minutes As there is considerable pressure, when the bulb of the apparatus is squeezed, it is necessary that all connections should be attached firmly



A apparatus for administering arsphenamin by present gravity method *B* modification

The additions and improvements in mechanism over the gravity method are illustrated in the accompanying drawing, in which *A* represents the present gravity method of administering, 1 *A* shows a graduated glass cylinder holding fluid to be administered, 2 *A* shows ordinary rubber tubing through which the fluid flows to needle 5 *A* *B* represents the modification of the gravity method of administering, 1 shows a glass graduated cylinder, attached to which is a rubber tubing, five-eighths inch in diameter and 4 feet in length, at the end of the tubing is connected a rubber bulb, 3, in continuation and attached to the lower end of this bulb is about 18 inches of the same caliber of rubber tubing, 2 continued, to the end of which is attached the barrel of a Luer syringe or similar piece of glass 4, that can be connected with a small Luer needle, 5, preferably a 19 gage, 1¼ inch size

The bulb, 3, is constructed with valves as indicated, so that by gravity there will be a continuous flow of fluid, or when the bulb is compressed the fluid will be injected through the needle into the vein, 8, when the bulb is pressed on, the upper valve is pushed up and the lower valve driven down, allowing the fluid to escape, but no air to enter the bulb

The glass, 4, attached directly to the needle, 5, serves also as a convenient handle, 6, for approaching the desired vein, 8, and when the vein is entered, the blood flowing into the glass barrel at 7 is assurance that the vein has been entered The fluid will then run into the vein by gravity By intermittently pressing on the bulb, 3, the fluid can be regulated, and 120 c c of solution can be given in from two to twelve minutes, as desired

A small piece of cotton and strip of adhesive tape is put over the puncture at 8, after the administration, and a little of the solution is allowed to run through the needle, putting on the stopcock when the fluid in 4 is clear and the glass is filled with fluid The needle is then free from blood and immediately put into the sterilizer, and another needle is attached to the glass barrel, ready for the following operation

ADVANTAGES

1 The improvement of the attached valvular bulb's use in connection with the present gravity method, controlling and regulating the flow, permitting the administering of a large number of doses in a short time, necessary in public clinic service, and lessening the work in each individual case, without tire to the patient.

2 The improvement of the attached glass barrel, which gives the administering hand a steady hold on the needle indicates the flow of fluid, and notifies the physician when the vein has been reached without spilling one drop of blood. This lessens the danger of moving or puncturing the vein during the operation, and makes it a clean, bloodless operation

3 The improvement of using a small needle, in which there is no clotting of blood on account of the forced flow of fluid, which cleans the needle and leaves it ready for the sterilizer.

322 Dickson Building

AMNIOTIC HERNIA CORRECTED BY OPERATION

JOHN FORMICHELLA, M D BRIDGEPORT CONN

I read with much interest Dr Thorek's[1] report of a case of amniotic hernia The illustration accompanying the report was surprisingly similar to a case I saw April 30, 1921 The mother, a primipara, aged 25, had been attended during labor, which was normal, by a midwife I was called at 10 a m, soon after the birth of a full-term, 9-pound, well developed and well nourished baby girl, presenting an amniotic hernia the size of a grapefruit, somewhat elongated The hernia was protruding through an opening a little larger than a half-dollar, and was enveloped by the dilated sheath of the cord, which had been tied by the midwife at about 2 inches from the beginning of the dilatation The contents of the hernia, consisting of intestine, were plainly visible as through a glass

I never before had occasion to see any similar case, but I expressed to the family the certainty of the death of the baby in a day or so unless they would take the risk of an immediate operation The parents consenting, I took the baby to the Columbus Hospital

The first step of the operation, before opening the sac, was to reduce the contents The sac was then ligated near its base and resected The patient, resenting the procedure, began to scream and strain herself so much that suddenly the ligature slipped off, allowing the intestine to come out again Then the administration of ether became imperative Even under general anesthesia the reposition was so difficult that two incisions, each 1 inch long, one above and one below the original opening, were required The wound was then closed with five interrupted mattress sutures of plain catgut No 2, about one-fourth inch from its margin, through all the layers, including the skin, followed by a continuous suture of the

1 Thorek Max Report of a Case of Amniotic Hernia, J A M A 76 1748 (June 18) 1921

skin alone with No 1 plain catgut The wound was covered with gauze, held by straps of adhesive plaster, and a gauze bandage was applied

Soon after the operation, the cyanosis disappeared In the afternoon, about 6 hours after the operation, I took the patient home, recommending the mother not to handle her unnecessarily Everything went well To change the dressing at the end of the first week, I took the patient to the hospital for fear that the wound might possibly open I found that, although the dressing was wet with a green secretion, the sutures were holding firmly Three days later I redressed the wound at home By the first of June, the wound was completely healed, leaving a strong scar through which it was possible to notice, on palpation, two small diastases of the fascia If, in the future, an incisional hernia should develop, it will be an easy matter to repair it At present the patient is in the best of health

654 Pembroke Street

A CASE OF CONGENITAL ICHTHYOSIS

C H DEAN M D AKRON OHIO

March 20, 1921 an American woman gave birth to a girl after a normal labor On delivery of the head, it was noted that the face was a dull pasty white, and singularly devoid of human expression The eyes were narrow slits, the nose flat and the ears scarcely discernible On completion of delivery, transverse lines appeared on the chest as it expanded Otherwise no abnormal color was noted The child breathed quickly and well, and the face was soon the color of the body Because of lack of assistance I oiled the child, using olive oil Nothing peculiar in the texture of the skin was noted

When next seen about nine hours later, the child presented a striking appearance The whole body and face was a bright copper color The skin was dry, and crackled like parchment or an onion skin The face was expressionless, the eyes were deep slits and scarcely openable, the nose flat, the ears crumpled and very small, the nails poorly developed, and the toes and fingers poorly formed There was a bulla on the side of each foot The child was vigorous and had taken the breast

That afternoon, Dr R S Friedley saw the child with me and we came to the conclusion that we were dealing with a case of congenital ichthyosis During the next two days the child was seen by other physicians, but none had seen a similar case

The child early became fretful and was finally given small amounts of paregoric, which afforded it some relief The skin was kept well oiled We used petrolatum, olive oil and cold cream, and finally settled on olive oil as the most useful When sufficiently oiled, the child rested better Quarts of oil were used The child continued vigorous and took the breast well The temperature ranged about 99 by rectum, and the bowel and bladder were emptied normally

The maternal grandmother offered the information that two of her children (the child's mother and aunt) had presented the same appearance at birth and had done well Both were examined and presented no skin abnormality Both parents of the child gave a negative Wassermann reaction

March 22 flakes began to be detached from the lower lip and groin On the 23d, large flakes were detached Complete casts were removed from the nose and ears, and these organs immediately expanded to normal size and contour The flakes from the scalp were large and pierced by the hair After desquamation, the nails and digits were found to be normal On removal of the flakes the skin was very delicate and appeared normal In a few hours this normal appearing skin became dry and stiffened and finally desquamated It was as necessary to keep the skin oiled as before the first desquamation, for only so could the child be kept comfortable This process continued repeatedly, but each desquamation was less till May 22, when last seen, the skin seemed normal, was not oiled, and there was no visible desquamation Since then the family has disappeared.

We have been able to find nothing more enlightening than the descriptions of congenital ichthyosis, except that Knowles says under that head "In other instances the infant is born with a collodion-like membrane covering the skin, but this coating peels off in sheets, and after a short period of desquamation the skin assumes a normal aspect The latter, although resembling, is distinct from ichthyosis"

What is the condition?

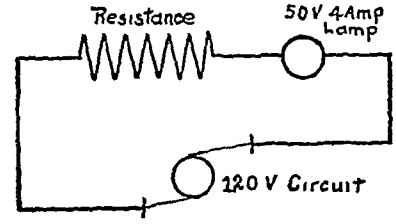
522 Wooster Avenue

[COMMENT—This case is one in which Bowen has suggested there is a persistence of the epitrichial layer, which is usually cast off by the seventh month References to cases of the sort will be found in Pusey, Edition 3, page 899—ED]

A SIMPLE AND EFFICIENT LIGHT SOURCE FOR THE ELECTROCARDIOGRAPH

PRO V PREWITT, M D NEW YORK
Assistant Professor of Physiology University and Bellevue Hospital Medical College

Some objections to the use of the carbon arc as a light source in the electrocardiograph are (*a*) light and dark streaks in the tracings due to inconstancy of illumination, (*b*) interruption, frequently, of the process of taking an electrocardiogram to replace an exhausted carbon, (*c*) frequent cleaning and difficult alinement of the elements of the optical train, necessarily interposed between such a light source and the galvanometer, (*d*) frequent delays involved by replacing fuses in the lighting circuit on account of failure of the magnets in the lamp to prevent contact of the carbons and (*e*) space occupied, unnecessarily, by the optical train and arc lamp



Arrangement of resistance and lamp in the lighting circuit

The 14 volt, monoplane filament lamp usually supplied with the American made electrocardiograph is unsatisfactory because of its insufficient luminosity

We have found that the 50 volt, 4 ampere, Type T M 200 monoplane filament, hard glass lamp gives results equal to the best of those obtained from the arc lamp to the exclusion of the disadvantages associated with such a light source This lamp is designed for use in the usual type of miniature socket supplied with the American made electrocardiograph The photic efficiency of the lamp may be increased as much as 60 per cent. by placing a small convex mirror immediately behind the bulb

The average life of this lamp is about 100 burning hours on a 50 volt circuit Since the functional duration is decreased by operation on a circuit of only slightly higher voltage, it should be operated in series with a resistance allowing a maximum of not over 50 volts Such a voltage can be obtained by placing in series, in a 120 volt direct or alternating current circuit, 155 feet of No 16 gage or 121 feet of No 17 gage Advance resistance wire, according to the accompanying diagram[1]

1 It was at the suggestion of Messrs Summers and Otteson of the Industrial Lighting Department of the Edison Lamp Works Harrison N J that we investigated the adaptability of this lamp The lamps are made by the Edison Company and distributed by the Pathescope Company

State Health Administration—The state should perform those necessary functions of health administration which, if omitted or left to the numerous counties of the state to assume would require in the place of a single state agency many county agencies with much overlapping and extravagance and nothing like the efficiency that would be had through one well organized state agency—W S Rankin, *Tr Assn. Life Ins Presidents*, 1919

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, AUGUST 6, 1921

THE REGULATION OF BLOOD SUGAR CONTENT

The mechanisms whereby the physiologic constants of the body are maintained have provided investigators with perennial problems The regulation of the content of blood sugar is frequently discussed Since the classic studies of Claude Bernard, the rôle of the liver in the storage of sugar as glycogen has been universally accepted, and the textbooks have dismissed the description of this vital phenomenon with general statements of the formation of hepatic glycogen and its subsequent hydrolysis to glucose The phenomenon is not a haphazard one Careful physiologic regulation undoubtedly occurs Hence one is impelled to inquire What is the mechanism whereby the blood sugar concentration is normally adjusted so nicely that the content of glucose remains at from 0 07 to 0 11 per cent in starvation as well as in full digestion?

In a recent series of papers, Langfeldt,[1] besides reviewing the earlier work on this subject, has added new observations of his own and formulated an attractive theory of blood sugar regulation The blood sugar concentration obviously is a balance between glycogen formation, on the one hand, and glycogen hydrolysis, on the other That the presence of pancreatic hormone is necessary for the synthesis of glycogen seems fairly well established by perfusion experiments of Langfeldt and others The factor governing the hydrolysis of glycogen, on the other hand, appears to be the reaction of the blood, for the activity of the liver diastase seems to vary with or depend on the hydrogen ion concentration It has long been known that, in general, autolysis is favored by an acid reaction, but Langfeldt has demonstrated the varying activity of the various possible salt combinations of the liver diastase at varying hydrogen ion concentrations The optimal activity of the diastase sodium chlorid complex, which is the most probable enzyme-salt combination in the body, is at p_H 6 8, so that the usually higher hydrogen ion concentration of the blood acts as a check on the process of glycogenolysis in the liver The author has thus formulated his theory Under the influence of the pancreatic hormone, fragments of the protein and carbohydrate of the digested food are synthesized to glycogen in the liver This carbohydrate may subsequently be hydrolyzed by the liver diastase to sugar, which is poured into the blood and is metabolized to yield energy, resynthesized to glycogen in muscle and other cells, or is returned to the liver, where it is again built up into hepatic glycogen In starvation the glycogen supply is maintained by the glucose derived from amino-acids, and by glycerol from the fats of the tissue of the starving animal

With increase in the hydrogen ion concentration of the liver cells one would expect increased glycogenolytic activity, as when acid is injected into the organism or the liver autolyzes in the absence of oxygen Epinephrin forms a diastase complex very active at the hydrogen ion concentration of the blood, which may account for the hyperglycemia following administration of this substance On the other hand, if the glycogen formation fails through lack of the pancreatic hormone, we should observe an increased blood sugar, which is the case in pancreatic diabetes From a reconsideration of older data supplemented by some new observations it appears, then, that glycogen formation and glycogenolysis, the two forces that have long been known to be concerned in the maintenance of constant blood sugar concentration, are continually in operation, and that the hydrogen ion concentration of the blood and the pancreatic hormone have important roles as regulators in this mechanism

1 Langfeldt E Blood Sugar Regulation and the Origin of the Hyperglycemias I Glycogen Formation and Glycogenolysis J Biol Chem 46 381 (April) 1921 II Conditions of Action of Liver Diastases ibid p 391 III Theory ibid p 403

THE RELATIONSHIP BETWEEN TRAUMA AND MALIGNANT DISEASE FROM AN INDUSTRIAL STANDPOINT

The continued growth of industrial insurance, workmen's compensation and similar medicosocial laws gives increasing importance to the question whether malignant growth is ever the result of a single trauma Hence the judicious review of the subject by Ophüls [1] is most timely That long continued irritation leads to the development of cancer is universally accepted In some instances this fact has a distinct importance in industrial medicine, as, for example, in dye-workers' cancer of the bladder [2] and paraffin-workers' cancer of the skin The possible responsibility of a single trauma leading to malignancy is less generally accepted, and by some authors is practically denied Such absolute negation is, however, undoubtedly unsafe in the present state of our knowledge concerning cancer We generally recognize that any change that is associated with tissue proliferation may terminate in the development of true tumor Other things being equal, this transformation

1 Ophuls William Relationship Between Trauma and Malignant Disease from an Industrial Standpoint California State J Med 19 54 (Feb) 1921

2 Dye Workers Cancer an Important Industrial Disease editorial J A M A 75 321 (July 31) 1920 Hamilton Alice J Indust Hyg 3 16 1921

occurs the more readily, the more actively the tissues are proliferating and the longer the tissue proliferation has continued It is also evident that this transformation is fortunately a rare occurrence, for pathologic tissue proliferations due to one cause or another are exceedingly common There is hardly any human being, or any living organism, for that matter, exempt from them, but tumors we encounter only occasionally The existence of intermediate stages, in which even the most expert with all modern technical means at his disposal cannot decide whether they should be classified as tumors or whether they still belong to the other pathologic conditions mentioned, seems to indicate that, after all, the same process continues only in a vastly exaggerated form in a more or less predisposed individual

From these theoretical conditions it will be evident that trauma can contribute to the development of tumors so far as it causes tissue proliferation, and, since any break in continuity, such as is likely to occur as a result of the trauma, is sure to be followed by regenerative and often by inflammatory proliferative processes, the possibility certainly exists that these may go on to the development of true tumors

At one time an uncritical acceptance of patients' statements concerning the relation of some previous injury to their existing tumor led to the prevalence of the view that single trauma often led to tumor formation Thus, Samuel Gross in 1897 attributed half of his cases of sarcoma of the long bones to traumatism, and many other surgeons accepted a traumatic origin for a large proportion of cases of sarcoma, and for some of the carcinomas, especially those of the breast

As a result of the more careful analysis of cases, the percentage figures of tumors really ascribable to injury has been decreasing greatly In his handbook on accident medicine, Kaufmann states that there seems to be a reasonable connection between trauma and benign tumors in 2 per cent, between trauma and carcinoma also in about 2 per cent, and between trauma and sarcoma in 5 per cent of the cases, and Loewenstein informs us that the statistics of the Prussian army and navy from 1899 to 1907 reveal a proportion of one case of post-traumatic malignancy in 15,000 accidents Our general conclusion, then, would be that a single trauma not followed by complications is a rare cause of tumor, and each individual case must be subjected to a careful analysis before arriving at any conclusion

As proper criteria for establishing the relation of a single trauma to a subsequent tumor, Ophuls lays down these rules 1 The occurrence of the trauma must be proved 2 The trauma must have been severe enough to appear effective 3 The growth must develop at a place likely to have been injured by the trauma 4 It must be reasonably certain that the traumatized part was normal before the accident 5 The time elapsing between the trauma and the appearance of the tumor must agree with our scientific experience in the rapidity of the development of the particular kind of tumor under consideration The time must not be too short, not less than several weeks, nor too long The outside limit is usually given at about two years, but a reasonable connection may be assumed even in cases in which the interval is much longer, if there are symptoms that bridge the intervening period Applying these criteria, Ophuls recognizes that fibromas occasionally result from trauma, and that numerous fairly well authenticated cases of enchondroma have been reported, these possibly result from stimulation of an already existing abnormal mass of cartilage, but even such an occurrence would seem to entitle the patient to compensation

Among all sarcomas, those of bones are most frequently referred to trauma and, theoretically, the interrelation seems quite plausible, because any injury to bone, and particularly a fracture, is followed by the most remarkably vigorous production of new tissue In fact, the callus production is often so exuberant that it is difficult to decide, even microscopically, whether one is dealing with normal regenerative processes or tumor While Kaufmann estimates that 12 per cent of bone sarcomas are of traumatic origin, Ophuls believes that this figure is still too high, but even the most skeptical observer must acknowledge that there are a certain number of reports of such cases which are thoroughly convincing As to carcinoma following a single trauma, there seem to be few if any that have been satisfactorily proved, although there is no *a priori* reason why in certain cases the reparative stimulus following a single injury of epithelium may not pass into malignancy The round cell tumors of the testicle, which some authors call carcinoma, seem to be the only malignant growth of organs which is definitely produced by single traumatism, and Ophuls believes that such cases are frequent Ewing[3] calls attention to the fact that trauma is an effective method of producing artificial parthenogenesis, which may account for the relative frequency of post-traumatic tumors in the testicle and in misplaced and undeveloped organs There is also good evidence that at least some gliomas have resulted from cranial trauma Therefore, as Ophuls says, it would appear that in estimating the probability of a connection between trauma and the development of a true tumor, the collective experience that has so far been obtained in the particular type of tumor concerned should also be carefully taken into account

Ewing, who takes a liberal attitude toward the problem, says that it is necessary to distinguish also between complete and partial liability When a healthy adult receives a blow on the head, remains unconscious for days, never recovers full mentality, shortly develops signs of brain tumor, and dies in a few months of

[3] Ewing Textbook of Pathology Philadelphia W B Saunders Company 1919 p 110

gliosarcoma of suitable size and location, the liability is generally accepted as complete When a patient with symptoms of abdominal disease receives a blow in the epigastrium and rapidly succumbs to carcinoma of an abdominal organ, it is reasonable to assume that the trauma hastened the progress of an existing tumor As Segond states, trauma reveals, aggravates or serves as a pretext for the origin of tumors, so that in each case very careful consideration of all circumstances is required to establish the relation of the injury

MODE OF ACTION OF SOME COMMON LAXATIVES

Without doubt the common laxatives are the most widely used drugs in the entire pharmacopeia of the modern physician, hence the conclusion is irresistible that he should be adequately informed regarding their precise mode of action If an added reason were necessary it could readily be found in the all but universal use of laxative drugs by the laity Sometimes they are purchased by the public with a distinct appreciation of their purpose, not infrequently potent laxatives represent an essential ingredient of proprietary and "patent" medicines that are secret as to composition and misrepresented with respect to their pharmacology Probably physicians would be more discriminating, or at least more rational in the prescription of the various laxative preparations, if information regarding the pharmacodynamics of the subject were more widely disseminated among the members of the profession

Calomel is a popular representative of the group of nonsaline laxatives It has currently been represented to act by promoting intestinal secretion and retarding absorption, so that an accumulation of the abundant fluid and a consequent evacuation of semisolid contents ensues [1] A recent investigation of the pharmacologic action of calomel, aided in particular by roentgen-ray observations of the progress of the alimentary reactions, has not substantiated the view just cited Working in the pharmacologic institute of the University at Utrecht, van der Willigen [2] has concluded that absorption in the gastro-intestinal canal is not interfered with in the presence of calomel The drug functions by promoting more vigorous movements of the small and large intestines whereby the contents are propelled so rapidly toward the rectum that absorption and the production of formed stools cannot take place The fundamental feature in the action of calomel, therefore, is its influence on alimentary peristalsis

The widely used phenolphthalein, the laxative action of which was an accidental discovery of pharmacology, is another drug which promotes peristalsis so that fluid contents are driven into the proximal colon more rapidly than under normal circumstances Van der Willigen [3] has recently demonstrated that the drug does not retard absorption, nor does it produce secretion in undue quantities, as is currently taught In connection with this laxative also, then, our present day assumptions must be revised

How sulphur acts to promote purgation has been considerably debated One investigator, for example, has believed that it gives rise to sulphurous acid which acts as an irritant in the bowel [4] In contrast with this is the finding of hydrogen sulphid in the lower small intestine and upper large bowel after ingestion of sulphur [5] The most recent investigator, van der Willigen,[6] has adopted the hypothesis of the function of the hydrogen sulphid as the potent factor He thus pictures its action Ordinarily, the chyme which discharges from the small intestine into the colon is soon concentrated there by the rapid absorption of water, but when hydrogen sulphid is formed in considerable abundance from ingested sulphur it provokes a more rapid passage of the semifluid contents beyond the colon, so that the usual concentration cannot take place A corresponding change in the feces is observed along with the more rapid evacuation

THE RÔLE OF OXYGEN AND HEAT PRODUCTION IN THE FUNCTION OF MUSCLES

When a muscle contracts, energy is liberated in several forms The measurable manifestations include a change in electrical potential, mechanical work, and the production of heat Furthermore, carbohydrates disappear and carbon dioxid is given off Only a few years ago it was customary to compare the working muscle to a heat engine in which the potential chemical energy of supplied fuel is first converted into heat by combustion, that is, oxidation, a portion of the liberated heat energy thereupon being utilized to perform mechanical work, as in the device of human construction

Of late, many evidences have been adduced to show that muscular contraction cannot be the direct outcome of the oxidation of some combustible chemical muscle component The difference of temperature required to satisfy the laws of thermodynamics applied to heat engines is not conceivable in the case of muscle It appears more likely that the contractile tissues function in some different way as chemical or chemodynamic engines A V Hill of the University of Cambridge, England, has devised recording apparatus sufficiently sensitive to indicate temperature changes of less than 0 000001 degree Centigrade With such delicate instruments he has been able to follow the time relations of heat production in isolated muscles readily during exceedingly brief intervals It appears from his

1 Meyer H H and Gottlieb R Experimentelle Pharmakologie Ed 4 Vienna 1920
2 Van der Willigen A M M Die Abfuhrwirkung des Kalomels, Arch f d ges Physiol. **186** 185 1921
3 Van der Willigen A M M Die Abfuhrwirkung des Phenolphthaleins Arch f d ges Physiol **186** 193 1921
4 Frankl T Ueber die Darmwirkung des Schwefels Arch f exper Path u Pharmakol **65** 303 1911
5 Taegen H Ueber die Abfuhrwirkung des Schwefels Arch f exper Path u Pharmakol **69** 263 1912
6 Van der Willigen A M M Die Abfuhrwirkung des Schwefels Arch f d ges Physiol **186** 173 1921

researches with Hartree[1] that heat production in muscular contraction can be resolved into a series of phases There is an initial rapid production followed by a diminishing rate, then there is a relatively large evolution of heat, occurring rather suddenly during the later stages of relaxation, and a large, but slow, production of heat occurring in the presence of oxygen for some minutes after the contraction is over

These investigations, along with earlier studies of Weiszacker,[2] have further demonstrated the important fact that both the time relations and the magnitude of the heat production in the early stages of excitation of a muscle are unaffected by oxygen Obviously, there must be some sort of chemical reaction going on, but the initial chemical breakdown may be regarded as entirely nonoxidative in character From this standpoint, the role of oxygen in muscular contraction is put in a new light The mechanical response of the muscle to stimulation and its maintenance in the contractile state is not the result of combustion in the working tissue Oxidation comes into play in the recovery from activity If one conceives some product like lactic acid to arise in the initial stage from chemical breakdown, the oxidative recovery may consist in the combustion of the cleavage product According to Hill's researches, the slow oxidative recovery, as well as the rapid initial contractile changes, is associated with the production of heat hence, further, the importance of oxygen in the avoidance of fatigue from accumulation of unoxidized wastes of the contractile acts These facts give some idea of the part played by oxygen in the function of our muscles They do not answer the more fundamental question How is the contraction produced?

Current Comment

REPRIEVE FOR MISSOURI IN MEDICAL LICENSURE

Reference has previously been made[3] to an amendment to the Missouri medical practice law voted by the legislature of that state last April The amendment substituted for the word "reputable" in its reference to medical colleges in the law the words "legally chartered," the effect being to lower seriously the educational standards of the state The word "reputable" gave the licensing board authority to establish reasonable standards of preliminary and professional education and to refuse to admit to its examinations graduates of medical schools which did not meet these requirements The words "legally chartered," on the other hand, meant nothing, since all medical schools, and even the worst diploma mills, have been found to be "legally chartered" Through this change in the wording of the law, graduates of low grade medical schools throughout the country would be eligible to licenses in Missouri, although at present they are refused admission by from forty-two to forty-four states In spite of vigorous opposition by the medical profession, the leading university medical schools and many intelligent laymen of the state, the governor signed the measure Immediately a canvass of the state was begun by those opposing the bill, and more than 76,000 signatures were obtained to a petition asking that the measure be submitted to a referendum vote of the people of Missouri at the next general election Owing to the short time permitted for the canvass, automobiles were freely used and the petition was delivered to the state capital by an aeroplane The attorney general of the state has since announced that all legal requirements have been met, and the referendum is thus assured Thus Missouri has been granted a reprieve from the disgrace of lowered standards of medical education and licensure, at least until November, 1922, when the people of the state will make the final decision

A LAYMAN'S DEFENSE OF ANIMAL EXPERIMENTATION

The July issue of the *Woman's Home Companion* contains an important article, entitled "The Truth about Vivisection" The author, Mr Ernest Harold Baynes, is well known throughout the United States as an animal lover Of him Roosevelt said, "He has the highest reputation in all forms of work for the care of animals" There is little wonder, consequently, that when, horrified by the statements of wanton, even demoniac, cruelty in laboratories, which he had read in antivivisection literature, Mr Baynes determined to learn whether these statements were true, and if true, to work vigorously for immediate abolition of the evil He soon discovered that the literature was characterized by misstatements of fact, by perversions of truth, and by suppressions which were equivalent to falsehoods His inquiry quickly led him to perceive that the two central propositions on which the antivivisectionists base their propaganda are that animals are ruthlessly tortured to gratify the curiosity of the heartless experimenters, and that the results are of no benefit whatever The first of these claims he investigated by visiting, unheralded, a number of active laboratories and watching the experimental procedures He found, not "brutality and heartlessness," but kindness and consideration He was interested to observe posted in the laboratories certain rules regarding the care of animals These rules, we may remark, were formulated more than a decade ago by the Bureau for the Protection of Medical Research of the American Medical Association, and have been formally adopted and are being enforced in every medical school and medical research institute in the country The claim that the experimental method in medicine has been useless Mr Baynes learned was overwhelmingly disproved by unimpeachable evidence In presenting the case to his readers he cites the results of diphtheria antitoxin, of asepsis in relation to surgery and puerperal fever, of antityphoid vaccination, and of the human experiments which disclosed the mode

1 Hill A V and Hartree W The Four Phases of Heat Production of Muscle J Physiol 54 84 (Aug) 1920
2 Weiszacker V J Physiol 48 396 1914
3 Unfortunate Missouri Current Comment J A M A 76 1251 (April 30) 1921

of transmission of yellow fever This story of his own personal experience Mr Baynes tells with the utmost candor and directness No more effective attack on the methods and assertions of the antivivisectionists has ever appeared in a popular journal The article has attracted much favorable comment from the daily press in all sections It has stirred the antivivisection societies to frantic retaliation A circular letter from one of them mentions the "evident commercialism" (whatever that may mean) of the article, and urges readers to protest against such misuse of a "home" magazine A circular letter from another society urges subscribers to cancel their subscriptions For spreading broadcast this instructive examination of the misleading statements and claims of the antivivisectionists and of the procedures and achievements of experimental research in medicine, the gratitude of the entire medical profession and of well-informed citizens everywhere is due to Mr Baynes and to the editor of the *Woman's Home Companion* They have done a highly valuable service by instructing the public in a matter of fundamental significance for public welfare As they together declare, the *Companion* would not have published the article if it were not "of the utmost importance to the human race, and to animals as well, that medicine and surgery be allowed to advance, unhampered by ignorance, prejudice and sentimentality"

THE AMERICAN CHEMICAL INDUSTRY

Before the war, American physicians were besieged with a host of coal-tar synthetics for which claims of therapeutic value were made Most of these had their genesis in Germany In the refinement of coal-tar, it seemed as if practically all by-products which could not be employed as explosives or dyes per se were being offered as drugs and were being marketed with extensive solicitation and advertising Since the war, only a few of these drugs on which letters patent have been granted and which were exploited formerly by German manufacturers have been found to possess sufficient commercial possibilities to warrant their manufacture in this country[1] However, many valuable *nonpatented* drugs were wofully scarce during 1916-1918 because of the inadequacy of American chemical manufacture As has been pointed out previously, and recently reemphasized in Congress by Representative C R Layton,[2] during the war such common substances as acetphenetidin antipyrin, resorcinol and phenolphthalein sold at fabulously high prices, while in some instances actual suffering resulted from the scarcity of arsphenamin and certain local anesthetics America was brought to realize its neglect in not manufacturing the dye products and the interdependent synthetic drug products American chemists, however, soon established a dye industry which at the same time alleviated the synthetic drug stringency Our active participation in the war, necessitating the manufacture of high explosives, served as an added stimulus so that today there exists a substantial American chemical industry The supply of useful drugs is ample, while prices are lower, and in cases of certain patented preparations on which German concerns formerly had a monopoly, are below prewar levels All this has been accomplished in the absence of serious foreign competition Now with the gradual recovery of Europe, the American industry is threatened This country should provide for the manufacture of worth-while remedies of this type As brought out by Congressman Layton, the medicinal compounds represent only part of the products of synthetic chemistry The intermediate products as well as the dyes are indispensable substances preliminary to the manufacture of all of the medicinal synthetics The country cannot be independent in its supplies of medicaments of this type unless it is also independent in the other coal-tar products

1 Leech P N Rabak William and Clark A H American Made Synthetic Drugs II J A M A **73** 754 (Sept. 6) 1919 Leech P N Chicago Chem Bull January 1918 p 230

2 Speech of Hon Caleb R Layton of Delaware in the House of Representatives Congressional Record July 9 1921 The Tariff on Dyestuffs and Drug Prices editorial J A M A **67** 880 (Sept 16) 1916

IS BROMIN A TISSUE COMPONENT?

The demonstration of the normal occurrence of iodin in the thyroid gland, a contribution which science owes to the biochemist Baumann, who announced his discovery in 1895, soon awakened suspicions that other equally unexpected elements may be present with comparable frequency in the organism There is no doubt that various elements do occur as chance constituents of living tissues They presumably represent fortuitous deposits which have found their way into the body through some exceptional circumstance Thus, copper and other heavy metals are sometimes found in demonstrable quantities in the liver, where they find a temporary lodgment In some of the invertebrates the blood pigment regularly contains copper in place of iron, which is found in hemoglobin The widespread distribution of manganese has often been a subject for comment Chemists have also argued that minute quantities of arsenic are a characteristic component of the organs of the higher animals The difficulties attached to any final conclusion regarding the problems here raised are largely those due to the selection of suitable highly accurate and delicate methods of analysis Many of the elements referred to are so omnipresent that they form a contamination of chemical reagents as well as of bodily fluids and tissues Bromin also has been proposed as a normal constituent of animal tissues In the case of this element, so closely resembling the other halogens chlorin and iodin in its chemical behavior, the difficulties of decisive demonstration have been peculiarly great It is worthy of note, however, that Damiens[1] now believes he has indisputably established the occurrence of bromin as a regular tissue constituent in a variety of animal species including man It does not seem to be localized in special structures as iodin is, in fact, it is reported missing in the thyroids The quantities reported average considerably less than 1 milligram per hundred grams of fresh tissue, that is, less

1 Damiens M A Sur le brome existant normalement dans les tissus animaux Bull Soc chim biol **3** 95 (April) 1921

than one part per hundred thousand This is an almost infinitesimal quantity, but these are days in which large results are sometimes associated with small factors Meanwhile we await corroboratory information

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES NEW HOSPITALS EDUCATION, PUBLIC HEALTH ETC)

CALIFORNIA

Physician Convicted — Dr Elias P Case, Oakland, is reported as having been found guilty on a charge of obtaining money by false pretenses, by pretending to perform an operation

Physician Guilty of Prescribing Narcotics —It is reported that, early in May, Dr Jacob L Arbogast, Sacramento, was convicted on a charge of prescribing narcotics in violation of the state poison act

Chiropractor Sentenced —A news item from a Los Angeles paper states that "Dr" Sue Amack, woman chiropractor convicted in May of treating the sick without a state license, is spending three months in the county jail

Chinese Herb Specialist Fined —Poo On, Chinese herbalist of Modesto, who recently completed a term of three months in the county jail and paid a fine of $500, for practicing medicine without a license, is reported as having again been convicted on a similar charge

Fined for Issuing Liquor Prescriptions —It is reported that Dr Rex V Graves and a Dr C E Cowles, Fullerton, were recently found guilty of illegally issuing liquor prescriptions Each was fined $300 and given a jail sentence of ninety days, the jail sentence being suspended

Personal —According to a statement of the county health officer, Dr Margaret E Farr forfeited her position in the Los Angeles County Health Office because of her loss of citizenship when she was recently married in New Mexico to Dr James Hatuji Hara, a Japanese physician of Moneta

Traveling Clinic for California Indians —An elaborately equipped medical and dental clinic mounted on a motor truck has been sent to visit the remote California Indian tribes The chief of each tribe will be asked to arrange for the treatment of all people who need medical aid and dental work The clinic which has been provided by the Indian Board of Cooperation and the United States Department of the Interior, will carry with it a physician and a dentist, and the California state departments have provided two nurses

Hospital News —According to an official announcement the new $600 000 hospital for tuberculous veterans of the World War will be ready for occupancy in August The new sanatorium will have a capacity for 310 patients —— The Roosevelt Hospital in Berkeley has passed into the control and possession of the Masonic Hospital Association and the name has been changed to King Solomon Hospital The association has acquired additional land and plans to construct a new fireproof modern hospital unit which will greatly increase the capacity of the present hospital Negotiations are under way for a hospital in San Francisco, and ultimately there will be a chain of hospitals throughout the state —— Excavation work has been started for the new county hospital to be erected by the county of San Mateo It is expected that the hospital will be completed and ready for occupancy within one year

CONNECTICUT

Hospital News.—The new hospital of New Haven, which is now being renovated and thoroughly modernized, will accommodate more than forty additional patients, when completed Through the cooperation of the Yale University School of Medicine, a new laboratory for medical research is planned, and the hospital is also developing final plans for a four-story private ward which will accommodate fifty-two patients and be thoroughly modern in every way

Hartley Foundation —Public health, mental hygiene and probation work, not only in Connecticut but also in other states, are the purposes announced by the Hartley Foundation, which was recently granted a special charter by the Connecticut legislature The foundation held its first meeting, July 19, at Norfolk, and the founder, Mrs Helen Hartley Jenkins, New York was chosen president, and her attorney Robbins B Stoeckel, Norfolk, secretary-treasurer Dr Samuel A Brown, dean of Bellevue Hospital Medical College, was made a member of the executive committee The foundation was established in memory of Mrs Jenkins' father the late Marcellus Hartley, former head of the Remington Arms Union Metallic Cartridge Company, and the funds made available by Mrs Jenkins are said to total several millions The public health department of the corporation will put its facilities at the disposal of the state or any subdivision of it in case of epidemics or other emergencies It will carry on mental hygiene work in connection with prisons reformatories and other institutions

GEORGIA

Cancer Quack Convicted —Arthur Grenoble according to reports was convicted recently in Atlanta for practicing medicine without a license, fined $500 and sentenced to serve twelve months on the chain gang and three months in the county jail According to the report, Grenoble was tried on indictments returned in July based on complaints made by F B Freeman that Grenoble had been treating his wife for cancer Grenoble declared the remedy used was of his own invention, that many people applied to him after doctors had given them up and that in many instances he had effected partial cures He claimed he had studied medicine in Worcester, Mass and in France and that he was licensed to practice in Cuba but admitted he had no license in Georgia

ILLINOIS

Personal —Dr Cecil R Driskell, Raymond, was burned about the face and arms when a can of ether which he was opening, exploded

Clinic for Physicians —The members of the DeWitt County Medical Association will be the guests, August 11, of the Peoria County Medical Society at the sanatorium of Dr George Michell near Peoria Dr Gaston LeBat, member of the staff of the University of Paris, will be the guest of honor

INDIANA

Medical Meeting — The physicians of the tenth district held a meeting recently at the home of George Ade, the author Drs Peter S Clark and Dean Lewis, Chicago and John A MacDonald Indianapolis, were the speakers

Sanatorium for the Insane —The present Park Hospital, Wabash which has been used in the capacity of a city institution for many years will be converted into a private sanatorium to be used exclusively for the treatment of insane patients Dr Gilbert M LaSalle will be in charge The sanatorium will be open in the fall

KENTUCKY

Itinerant Doctors Fined —In the conduct of a campaign to prevent the practice of medicine in the state by traveling physicians it is reported that the state board of health recently secured the conviction of Dr Simon N Jacobstein, a traveling optometrist and of Dr Roy Newell, a chiropodist, on the charge of practicing in counties in which they had not been licensed Each man was fined $50

MARYLAND

Hospital Positions Given Hopkins Graduates — Seventy-four members of this year's graduating class of the Johns Hopkins Medical School in which are included eleven women have been appointed to hospital positions Of these twenty-nine, including three women, were given positions at the Johns Hopkins Hospital, while forty-five others received appointments at other institutions throughout the country

Preventive Measures Against Plague —A report which has recently been submitted to the U S Public Health Service, after an investigation by Captain E F Allen, incorporates protective measures against bubonic plague outbreak in Baltimore Recommendations are made with regard to changes in the harbor regulations and suggestions for the

rat-proofing of wharves and docks to protect the city against rats getting ashore from vessels coming from ports where the plague is endemic

Personal—Dr Andre Gratia, a graduate of the University of Brussels, Belgium, with Mr J B Devin, an architect of Brussels, and Mr A Goosens-Bara, of the Brussels Board of Public Hospitals, are in Baltimore inspecting the buildings at the Johns Hopkins Hospital The results of the inspection and those made of medical institutions in other American cities will be incorporated in the Hospital of St Pierre, a teaching hospital to be connected with the Medical School of the University of Brussels, which will be erected at a cost of about $5,000,000

Joint County Medical Meeting—The medical societies of Allegheny and Garrett counties held a recent meeting in Grantsville Dr William S Gardner, Johns Hopkins Hospital, discussed the subject of gynecology, Dr Albert Keidel, also of Johns Hopkins, the treatment and prevention of syphilis, and Dr John J Donovan, Baltimore, discussed leading questions of the day, including the Sheppard-Towner bill, his views on the measure being unanimously endorsed by the association, which passed a resolution protesting against the passage of the bill

New Ruling for Fees at the Johns Hopkins Hospital—The Board of Trustees of the Johns Hopkins Hospital has issued a dictum fixing the maximum fee for an operation in the hospital at $1,000 and the maximum charge for attending a patient in the hospital at $35 a week It applies only to the part-time professors and their assistants in the medical school, and those physicians and surgeons of the Johns Hopkins staff who practice at the hospital The full-time professors and members of their staffs are not affected, because all fees received by them go into the William H Welch fund and are distributed to the various full-time departments

MINNESOTA

School for Tuberculous Children—Schoolchildren in Minneapolis who are tuberculous will receive medical treatment and their education at the same time, as the result of the establishment of Lymanhurst Hospital School According to a statement of the city health commissioner, this is the first school to be provided for educating tuberculous children barred from the public schools by state laws

MISSOURI

Petition Against Medicinal Beer—A petition asking that the manufacture and sale of beer for medicinal purposes be prohibited has been signed by 100 Missouri physicians and forwarded by the Missouri Anti-Saloon League to Washington for presentation to the federal prohibition director

Medical School to Be Enlarged—St Louis University is erecting a new building, 50 by 200 feet, three stories high, as an extension to the medical school Accommodations will be afforded for the library, reading room administration offices and the laboratories for physiology, pharmacology and histology In addition to this the old building is being remodeled so as to give more adequate accommodations to other departments

MONTANA

Appointment of Health Officers—The board of county commissioners has announced the appointment of Dr George A Fusom Kalispell, as full-time health officer for the year, beginning August 16, and also the renewal of the contract with the city and government providing for the continuance of the board of health for another year

NEW YORK

Poliomyelitis Increases—According to a special bulletin issued by the state department of health, July 28, the number of cases of poliomyelitis reported to the department during the first twenty-seven days of July was twenty-five, a greater number than has been reported during any July since the epidemic of 1916, and an increase over the number of cases previously reported during the year While the department does not view present conditions with alarm, it has sent a letter to health officers requesting them to be on the lookout for suspicious cases and offering the services of consulting diagnosticians in doubtful cases

Personal—Dr Frederick W McSorley formerly supervisor of tuberculosis hospitals, clinics and dispensaries in the New York State Department of Health, has been appointed director of the division of tuberculosis to succeed Dr Malcolm Lent, resigned——Dr McSorley's successor as supervisor of tuberculosis hospitals is Dr Lyman Thayer of the Albany Hospital Tuberculosis Sanatorium——Dr Elsie Blanchard, formerly supervisor of child welfare centers in the division of child hygiene, New York State Department of Health, has been appointed acting director of that division——Dr Charles C G McGaffin, recently of Kings Park State Hospital, Long Island, has been appointed assistant superintendent at the New York City Children's Hospital and School, Randalls Island, New York City

New York City

Deaths From Narcotics in New York City—A report from the Chief Medical Examiner of the City of New York for the years 1918-1921, shows that during this period there have been in this city 164 deaths due to narcotic drugs Of this number sixty-five occurred in 1918, fifty-six in 1919, and forty three in 1920 Morphin was responsible for the largest number of these deaths, 107 being attributable to that drug

Business Men Raise Fund for Downtown Hospital—About 200 of the business leaders of New York have formed a committee known as the Downtown Hospital Association to raise a fund of $1,000,000 to build the second unit of Broad Street Hospital The new addition which is now practically completed will nearly double the present 100-bed capacity of the hospital and give greater assurance of being adequate to meet the needs of lower Manhattan's population of 1,500 000 commuters

Post-Graduate Hospital Has War Memorial.—A huge bronze war memorial has been set up in the Post-Graduate Hospital in memory of the medical officers, nurses and enlisted men who formed a unit from that hospital and served in the American Expeditionary Forces, France, which functioned under the unit name of Base Hospital No 8, A E F, Savenay, Loire, France Five members of the unit lost their lives in the service and a gold star has been placed opposite the name of each of these

Personal—Dr William C Billings of the United States Public Health Service has assumed his duties as medical head of Ellis Island and director of inspection of immigrants for this port He succeeds Dr John W Kerr, who has been transferred to the Surgeon General's Office——Dr Rosalie Slaughter Morton sailed for Europe on the *Mongolia* on July 29——Dr Fenton B Turck and family sailed by the Mediterranean route on July 26 to spend two months in France and England——Dr Edmund L Gros head of the American Hospital in Neuilly, has arrived in this country——Dr David E Hoag sailed for France, July 21

Amendment to Sanitary Code Aids Enforcement of Narcotic Drug Regulations—Amendments to the sanitary code affecting the handling of cocain and opium were adopted by the New York City Health Department, July 26 Under the new provisions of the sanitary code violations are classed as misdemeanors and the power carried under the old state law, recently repealed, is restored to the police The resolutions adopted by the board of health state that the unauthorized possession sale, distribution, prescribing, administering or dispensing of either opium or cocain is dangerous to the public health and a menace to the public welfare Hashish also comes under the ban Within the twenty-four hours following the adoption of these resolutions, the police department made fifty-one arrests

OHIO

Auto Clinic for Suburban Towns—*During August and* September, practical advice and instruction on the care of babies will be given mothers in ten towns and villages near Cleveland by the Babies' Dispensary and Hospital An automobile truck completely fitted out as a baby clinic, in charge of trained nurses and physicians, will tour the country, and the service will be free

PENNSYLVANIA

New Hospital for Steel Company—A new and thoroughly equipped industrial hospital was opened August 1, by the Cambria Steel Company at Johnstown The old institution will be used as a receiving station Equipment of the new building includes a roentgen-ray room and a room with rehabilitation equipment, installed on the recommendation of the chief of the medical department Dr John B Lowman

A nurses' home with accommodation for twenty-three nurses is also to be provided

Philadelphia

Personal—Dr Francois L Hughes has been appointed as supervising medical inspector in the bureau of health He had been filling the place provisionally——Dr Percy E Luecke of the Philadelphia General Hospital was the sole eligible for assistant resident physician of the Bureau of Hospitals——Dr George E de Schweinitz, ophthalmologist and Dr John G Clark surgeon, will leave for Peking China, August 18 to attend the installation of the new director of the Union Medical College, founded by the Rockefeller Foundation

Pennsylvania Hospital to Be Rebuilt—The Pennsylvania Hospital at Eighth and Spruce streets, the oldest and one of the largest in Philadelphia, is to be rebuilt in part The new buildings in contemplation are a nurses' home, an outpatient building, a private patient building, a service building, and additions to the heating plant, laundry and laboratory Collaborating with Daniel D Test, superintendent of the institution and nationally known hospital authority, in the drafting of plans for the greater hospital is Dr Sigismund S Goldwater, noted sanitarian and former New York health commissioner The cost of the project has not yet been estimated, but it will provide for most modern facilities and equipment, it is stated.

WASHINGTON

Graduate Medical Lectures.—Under the auspices of the University Extension Services, cooperating with the Washington State Medical Association and the Kings County Medical Society, there was held at Seattle, July 18-23, the fifth annual course of graduate medical lectures The principal lecturers were Dr Charles Franklin Hoover Western Reserve University, director of medicine in the Lakeside Hospital, Cleveland, Dr Carl A Hamann, dean of applied anatomy and clinical surgery, Western Reserve University, Cleveland, and Dr Harris Peyton Mosher, assistant professor of laryngology, and instructor in anatomy at Harvard Medical School, laryngologist of the Massachusetts General Hospital, and president of the American Laryngological Association

GENERAL

American Association of Obstetricians, Gynecologists and Abdominal Surgeons—The thirty-fourth annual meeting of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons will be held at the Hotel Statler, St Louis September 20-22, under the presidency of Dr Henry Schwarz, St Louis

Tuberculosis Sanatorium—The U S Public Health Service has published plans and specifications for a model sanatorium for tuberculous patients, especially ex-service men These plans will be used in future service hospital construction Provision is made for occupational therapy and for vocational training for selected patients

American Chemical Society—The fall meeting of the American Chemical Society will be held in New York, September 6 to 10 This will probably be the largest meeting of the American Chemical Society that has ever been held, the society will have as guests at this time about 300 or 400 British and Canadian members of the Society of Chemical Industry who will have held their annual meeting in Canada A further reason for this being a large and successful meeting is the opening of the National Exposition of Chemical Industries, September 12, immediately after the close of the chemists conclave

Hospitalization Committee Makes Announcement.—Dr W C White of Pittsburgh chairman of the Hospitalization Committee of the Treasury Department, announced before a Senate committee this week that an additional expenditure of $16 400 000 would be needed to construct and improve the government hospitals to assure proper treatment of war veterans This sum Dr White testifies was in addition to the appropriation already made by Congress amounting to $18,600 000 He also stated that the report submitted to the President last spring by the special Dawes Commission was in reality a draft drawn by him and the other consultants of the Treasury Board on Hospitalization

Conference of the Pharmacopeial Committee of Revision.—More than forty members were present at the conference held on the roof garden of the Bellevue-Stratford Hotel Philadelphia, July 1-2 It resulted in an advancement of the work of revision to a point far in advance of that which has been attained by any previous committee during its first year of work Announcement was made of the authorization for translation into the Chinese language of the U S Pharmacopeia IX text, and also that research work on pharmacopeial problems by individual workers, on special request, may be released for publication A committee was appointed to arrange for a conference on international standards

Sanitary Work for National Parks—Since great numbers of tourists now travel through the national parks in automobiles and camp out, the sanitary problem has greatly increased At the request of the National Park Service, the U S Public Health Service has, since May 15, been sending engineers into Yellowstone, Mount Rainier, Yosemite and Grand Canyon Parks for examination and protection of water supplies, disposal of garbage and sewage inspection of milk and food and the way they are handled, and to provide for camp policing and sanitation Malaria carrying mosquitos have been found in Yosemite Park and special efforts will be made to eradicate them and keep them out of the other parks

Personal—At the meeting of the Medico-Chirurgical Society of Edinburgh, held July 6, Dr Robert Tait MacKenzie, professor of physical education in the University of Pennsylvania, discussed the system of physical training carried out in the University of Pennsylvania, and in other American colleges and universities——Dr Bernard L Wyatt recently returned from four years' service in France, as associate director of the Commission for the Prevention of Tuberculosis, International Health Board Rockefeller Foundation, has resigned from its medical staff to become director of health service with the Laurentide Company Ltd at Grand Mere, Quebec The Laurentide Company plans to organize a modern health and welfare service for the employees of its paper mills and logging centers

Prohibition Commissioner to Issue Beer Regulations.—Prohibition commissioner Blair has announced that he will make public within the near future the rules and regulations under which physicians will be permitted to issue permits and prescriptions for the use of beer for medicinal purposes These regulations have been ready for his signature for some time but have been held up pending the early passage of the Willis-Campbell anti-beer bill now in the Senate Delay in the passage of the measure and recently a postponement in the legislation led the commissioner to the opinion that the prohibition bureau had already postponed too long putting into effect the terms of the law as it now stands on the statute books Senator Moses of New Hampshire after this announcement was made introduced a resolution in the Senate requiring the Internal Revenue Commissioner to submit these regulations to the Senate so that they could be used in the Senate debate The resolution did not meet with immediate approval

Chaulmoogra Tree to Be Grown in This Country—Prof J F Rock, former president of the University of Hawaii and now an agent for the Department of Agriculture has just returned from an extensive trip through the jungles of Siam, Burma and Assam where he has been studying the problem of foreign seed and plant introduction into the United States After his arrival he announced that the introduction into this country of the chaulmoogra tree was assured and that a permanent supply of the oil for the treatment of leprosy is certain He also brought back with him several specimens of the 'taraktogenos' plant, the seeds of which have been sent to the various experimental stations of the Department of Florida Maryland and California for germination Within eight years enough fruit will be borne from these trees to initiate a domestic source of supply of chaulmoogra oil Professor Rock declared on his return that the natives of the parts of Asia which he visited had been using the curative properties of the taraktogenos trees for centuries

Agreement Reached on Sweet Bill—An agreement has been reached in conference between the Senate and the House on the Sweet Bill establishing a Veterans Bureau to administer to the needs of ex-service men The measure has passed both houses of Congress Instead of placing the Veterans Bureau in the Department of Treasury it has been made an independent governmental agent under the direction of the President According to the agreement between the conferees the burden of proof, in all cases where mental and

tuberculosis patients are claimants shall for two years be on the government The amendment passed in the Senate for the abolition of the Federal Board of Vocational Education was rescinded and the board will continue in operation confining its work to promoting cooperation between the states and the federal government in vocational education Another agreement provided that construction of hospitals for the Veterans' Bureau will be under the jurisdiction of the Treasury Department The Senate amendment under which blind soldiers would be allowed $50 per month for attendance instead of $20, was stricken out The bill has been passed by both houses of Congress as a conference report and now goes to the President for signature Its final enactment into a law means the end of Bureau of War Risk Insurance and all activities on the part of the U S Public Health Service in the assignment or disposition of disabled war veterans

Congresswoman Denounces Sheppard-Towner Bill—Characterizing the Sheppard-Towner Bill as 'class legislation of sex," and denouncing it as possessing "paternalistic possibilities of incalculable danger," Miss Alice Robertson of Oklahoma, the only woman member of Congress, appeals to American women in an open letter to use their influence to defeat the bill

To the American woman voter as an individual

'On July 22 by a vote of sixty three to seven—twenty six Senators absent—the United States Senate passed the bill variously known as the baby ' the maternity ' or the Sheppard Towner bill This bill is now pending consideration in the House Its supporters assert that it has the undivided support of the women voters of America

I was one of those millions of conservative home loving women, who never asked to vote who dreaded new and heavy responsibilities but God in infinite wisdom placed upon us the burden of the suffrage It matters not now whether we sought this duty or not we cannot evade it and from cowardice or indolence we must not now fail our country

CLAIMS BILL PATERNALISTIC

It is your bounden duty your inalienable right as an individual to know the real meaning of this bill Send a postcard to your Senator or member of Congress or to me asking for a copy, and when you receive the bill examine it carefully see if it does not carry with it a power, small in its beginning and seemingly innocuous but with paternalistic possibilities of incalculable danger Ask other women about it, ask your husbands your legal friends and when you have made up your mind, tell us your representatives in Washington

Remember the political women who are supporting this bill wishing the first test of their power in legislation to be a master stroke have used the most touching and irresistible appeal that could be placed before a body of American men Mothers of America, is this an insidious attempt to secure most dangerous class legislation—the class legislation of sex?

'I oppose this bill basing my action upon the belief that my sister women have not been fairly dealt with that even to the great hearted sympathetic president it has been claimed that the mothers want it and ask for it when the vast majority know nothing of it

I have personally given more time study and thought to this bill than to any other legislation now pending that has been my duty as the only woman who would have a right to lift her voice either for or against as a national law maker desiring to be prepared when this fateful issue comes to speak for the women in humble homes whose toil is glorified by love of husband and babies

If in your judgment this legislation is unnecessary for the reason that the family the community the municipality and the State understanding local conditions can care for their own without national mandate or espionage say so '

LATIN AMERICA

Merida Branch of Mexican Medical Association—A branch of the Mexican Medical Association was organized at Merida June 27 1921 The secretary of the local society is Dr Narciso Souza

Personal—Drs C E Paz Soldan and G Fernandez Davila, prominent Peruvian physicians, have returned to their country from a trip to Europe On their way they stopped at Havana——Friends of Dr Martin Alvizu of Carora, one of the prominent physicians of the western part of Venezuela, organized a committee to celebrate, July 19, 1921 the twenty-fifth anniversary of his graduation

Medical Society of Bahia—At its last meeting the Medical Society of Bahia Brazil elected the following officers honorary president Dr A Pacifico Pereira, president, Dr L. Pinto de Carvalho, vice president, Dr C O Ferreira de Moura, secretary general Dr E Diniz Goncalves, first secretary, Dr A Froesda Fonseca, second secretary, Dr E Vidal da Cunha, and treasurer, Dr J de Aguiar Costa Pinto

Centennial of Argentine Medical Statesman—June 25 was *the centennial of the birthday of Dr Guillermo* Rawson of Buenos Aires eminent as a hygienist, physician and statesman and a series of memorial meetings were held at the Academia de Medicina and elsewhere, with addresses by delegates from the University, from the government of Chile the Argentine Antituberculosis League, women's clubs and from the school and hospital named in his honor The Buenos Aires daily, *La Prensa*, also organized a public meeting to pay tribute to the memory of Professor Rawson

Graduate Course in Argentina—Courses in anesthesia as adapted for general practice, courses in children's diseases, in embryology, in women's diseases and in chemical analysis in its application to the clinic were held at Buenos Aires in July, with leading specialists in charge A similar set of courses is to be organized for next January Attendance at each course is restricted to ten physicians, and a certificate of attendance is given Each course consists of from six to ten eminently practical lectures and demonstrations, at the rate of 10 pesos per lecture, paid when registering These courses are proving extremely popular among physicians from all over Argentina

Personal—Dr M Cantillo, professor of pathology at the University of Bogota, Colombia, has been given a long leave of absence to recover his health Dr A Garces is serving during his absence——The University of Rio de Janeiro has conferred honorary degrees on Dr G Araoz Alfaro of Buenos Aires and Dr A Ricaldoni of Montevideo——Dr William Sharpe of the Polyclinic Medical School of New York has been in Rio de Janeiro, giving two lantern talks on the indications for and the technic of surgery of nerves He is intending to visit Argentina and Chile——The thirty years of service of Dr Franco da Rocha at the Hospicio de Juquery and his long term as professor of psychiatry at S Paulo Brazil were celebrated by his assistants and others recently ——A gold medal was recently presented to Dr Rayneri of Havana on the occasion of his fiftieth professional anniversary

FOREIGN

International Conference on Sexual Reform on Scientific Basis—One day of the conference, which is to be held at Berlin in September, is to be devoted to discussion of the internal secretions from the standpoint of sex The Institut fur Sexualwissenschaft has organized the conference The discussion on the endocrine system is to be opened by Biedl of Prague, Lipschütz of Dorpat, and Weil of Berlin

International Medical-Anthropologic Social Academy—This institution has been founded at Naples by the professors connected with the University Institute of Criminal Anthropology Prof A Zuccarelli is the president, and Profs G Corrado and E Ardizzone, vice presidents A journal is to be issued entitled *L'Anomalo*, for propaganda purposes, and public conferences are to be held for the education and warning of the public

Token of the Gratitude of France—The *Presse Medicale* for July 13 gives the latest list of physicians presented with the Medaille de la Reconnaissance Française They are all Belgian, Danish or Roumanian except Dr Richard Haven who was medical emigration officer at Genoa until 1915 when he tendered his services to France and served at Etaples, Neuilly and in French military hospitals until 1918 Also Dr Juan Henrique, of Cuba who served as physician to the French embassy at Santiago and the consulate at Valparaiso and examined all the French there summoned to the colors

British Medical Association—The annual meeting of the association was held, July 15-23, under the presidency of Prof David Drummond at Newcastle-on-Tyne On the occasion of the president's address, July 19, the gold medal of the association was presented to Sir Dawson Williams, editor of the *British Medical Journal* since 1898, in recognition of his services to the association and the medical profession ——The consent for universal postmortem examinations was strongly advocated by the president of the association Inquiries at London hospitals showed that postmortems were held in about 70 per cent of the cases which terminated fatally there But in every case it was necessary to obtain the consent of the next of kin of the deceased

Legislation Against Birth Control in France—A law went into effect in France, July 31, 1921, penalizing attempts to induce abortion and attempts at propaganda for birth control A Paris journal, *Le Parlementaire*, published Oct 9 1920, a first-page article protesting violently against this law, declaring that a woman's internal organs belong to her alone as much as her hair and her hands and that until society is ready to care for the mother and the child and

insure their support, it has no right to forbid birth control The article was not signed but the authorities brought suit against the editor and general manager of the journal and they were condemned The *Gazette des Hôpitaux* gives the details of the suit and the outcome, but does not mention the penalty enforced The law provides for imprisonment for from six months to three years

Tribute to Professor Fredericq—Prof Leon Fredericq retires this year from the chair of physiology at the University of Liege, and his pupils and other friends have prepared a souvenir volume with contributions from scientists of many lands to be presented to him and a tablet with his portrait in bas relief is to be unveiled at the Psychology Institute The ceremony will take place in November, 1921 All subscribing 30 francs (Belgian) will receive a bronze replica of the tablet A large committee is in charge, including Nolf, Beco, and others with Dr P Lelaya, 8 rue du Batty, Comte, Liege as treasurer Professor Fredericq is a member of numerous scientific societies in Belgium and elsewhere His scientific research has aided materially in the progress of biologic sciences in the last fifty years and the list of his publications is a very long one He will be 70 on August 24

Efforts of the Germans to Establish a Council on Pharmacy and Chemistry—THE JOURNAL mentioned Dec 25 1920, that the organized internists of Germany had resumed their efforts to gather and disseminate information in respect to pharmaceuticals similar to the work of our Council on Pharmacy and Chemistry As mentioned then, they have made several attempts in this line, but none were carried far The present attempt is now said to be halting on account of lack of funds The urgent appeal to the authorities and the profession has resulted in the collection of only 29 477 marks The German weeklies say that this is entirely inadequate for investigating the proprietaries as intended, but it will pay the expenses of an information bureau This is now organized and will be continued as long as the funds hold out If the profession finds useful the opportunity thus afforded for obtaining information in regard to proprietaries, the medical organizations may guarantee regular contributions to maintain this bureau

The Medical Congresses of the Northland — Helsingfors was the scene in June of a number of Scandinavian medical congresses Among them was the Tenth Northland Congress on Internal Medicine with Prof R Sievers in the chair Treatment of visceral syphilis and of neurosyphilis was the main topic for discussion Some of the speakers advocated small doses of mercury and potassium iodid, not aiming to destroy the virus but to realize a catalytic action The discussion on diabetes was mainly from the standpoint of roentgen differential diagnosis of constitutional disease The next congress is to be held at Christiania with Prof P F Holst as president The main subject appointed for discussion is the diagnosis and treatment of disturbances traceable to the thyroid The Second Conference of Tuberculosis Specialists appointed a committee to decide on a graphic method of recording stethoscope findings Bang Sømme and others extolling the advantages of their individual methods Bang's method is in general use in Denmark The *Ugeskrift for Læger* gives a brief account of these meetings

Deaths in Other Countries

Dr **Domingos de Góes e Vasconcellos**, professor of surgery at the University of Rio de Janeiro——Dr F **Vermehren**, a leading clinician of Copenhagen——Dr J **Egydio de Carvalho**, of S Paulo Brazil secretary of the medical school and chief of the gynecologic service at the Santa Casa Hospital——Dr E F **Pla**, director of the preparatory school at Havana——Dr T H **MacGillavry**, formerly professor of physiology and histology at the University of Leyden, aged 85——Dr V **Lang**, professor emeritus of the University of Vienna, recently president of the Academy of Sciences——Dr W **Schulein**, a Berlin obstetrician, aged 73——Dr R **Mignot**, at Paris, and Dr **Roume**, assassinated on an express train on his way to Bordeaux

CORRECTION

Basal Metabolism.—In the article by Dr H S Plummer, THE JOURNAL July 23, page 244 in the second and third paragraphs of the first column the word "grams' has been substituted for 'grains" in the phrases '150 gr desiccated thyroid" "20 gr ' and "250 gr desiccated thyroid has not caused any reaction"

Federalization of Medical Regiment.—In THE JOURNAL July 23, page 293, it was stated that the One Hundred and Second Medical Regiment was the first to be organized and federalized We are informed by Lieut-Col L E Persons that the One Hundred and Twelfth Medical Regiment which is a part of the Ohio National Guard, was organized and extended federal recognition May 17 1921 or two months prior to the recognition of the One Hundred and Second Regiment in New York

Government Services

Conference of Health Officers on Pellagra

As a result of reports made public by the U S Public Health Service of the spread of pellagra in the South President Harding has instructed Surgeon-General Hugh S Cumming to call a conference of the thirteen state health officers The meeting will be held in Washington on August 4 The states to be represented are Texas Louisiana, Oklahoma Arkansas, Tennessee, Mississippi, Georgia, Alabama, Kentucky Florida, North and South Carolina and Virginia Quite a controversy has arisen as a result of the reports issued by the U S Public Health Service concerning the existence of a famine among the tenant farmers Southern senators and congressmen have vigorously denied these serious conditions and claim that the number of cases of pellagra is no larger than usual They also repudiate the stories that there is not plenty of food for the small cotton farmers Representative Byrnes of South Carolina introduced a resolution in the House of Representatives requesting that the President submit to Congress all information and data available on the subject President Harding replied to this resolution by making public a letter he had written to Representative Byrnes in which he stated that authentic reports had come from southern states regarding pellagra and that the government was taking action as a precautionary measure to prevent the spread of the disease

Retirement of Colonel Crosby

Col William D Crosby, M C., U S Army has been placed on the retired list of the Army He has been stationed at Jefferson Barracks Mo He is a native of Massachusetts but was appointed to the Medical Corps of the Army in December 1883 from New York. He has held the rank of colonel since December, 1912

Interns in Army Hospitals

Announcement was made at the Surgeon-General's Office of the Army that because of the lack of appropriations made by Congress all interns taken in and now on duty at Army hospitals could not be guaranteed commissions in the Medical Corps Reduction in the size of the Army by Congress has resulted in a surplus of 121 medical officers and no new officers will be commissioned until this number is reduced by absorption and by death and by retirement The twenty interns now studying in the Army hospitals throughout the country have been notified that the present situation makes it impossible to reward them with a commission at the end of their year's course Surgeon-General Ireland however declared that the Medical Department would continue to accept students as interns up to the limit allowed by the law with the understanding that they have no prospects of a commission on graduation

Graduation of Medical Officers

The first class of U S Army student officers—numbering sixty-three, and of all ranks from second lieutenant to colonel—that have received instruction in field service activities at the Medical Department Field Service School Carlisle Pa were graduated July 19 Brig-Gen Walter D McCaw Medical Department U S Army, delivered an address, and Col Percy N Ashburn commandant of the school presented the diplomas Another class of students entered the school July 24

Foreign Letters

PARIS

(From Our Regular Correspondent)

July 8, 1921

American Nurses' Memorial Home

A very impressive Franco-American ceremony took place recently on the Bagatelle estate at Talence, near Bordeaux, in honor of the dedication of the Memorial Home of the Florence Nightingale school, which is an annex to the Protestant Sanatorium of Bordeaux This sanatorium was founded in 1863 to furnish medical attention to the sick foreign officers and sailors stationed in the port of Bordeaux The origin of the Memorial Home dates back to the time of the war, when approximately 20,000 American nurses came over to take care of the wounded Of this number, 294 died, martyrs of their devotion, and are buried on the European continent The committee of the American Nurses' Association decided, after the armistice, to erect a memorial in their honor, and to obtain the necessary funds they asked each nurse to contribute one dollar A total of 800,000 francs was collected The memorial took the form of a home for nurses to be erected in France A site in Bordeaux was chosen by the committee for its erection It was decided to make the Memorial Home an annex to the Florence Nightingale Training School for Nurses of Bordeaux Admiral Magruder, naval attache at the American embassy in Paris, presided at the dedication ceremonies He thanked in warm terms the Protestant Sanatorium, which for more than half a century has taken care of American sailors in Bordeaux and also treated them during the war The American torpedo boat *Child* 241, under the command of Admiral Niblack, had been stationed in the port of Bordeaux in honor of this ceremony in which seven of his officers and fifty of his sailors took part Major Wadsworth was the representative of the American army Among other American notables present I may mention Colonel Olds, American Red Cross commissioner for Europe, Dr Emerson, chief surgeon of the American Red Cross, medical delegates of the Rockefeller Foundation, the American consul in Bordeaux and among American nurses Miss Gardner, head of the visiting nurses of Providence, Mrs Mary Breckenridge, Miss Evelyn T Walker and Miss du Sautoy, directors of child welfare and of the American committee of visiting nurses for the devastated regions of France The corner stone of the Memorial Home was laid by Miss Hay, formerly superintendent of the Illinois Training School for Nurses, and, at the present time, head nurse of the American Red Cross in Europe The *Concours medical* contained a long editorial on the dedication of the Memorial Home, in which it stated that it was pleased to devote space to this subject not only because of a desire to give this recognition of all the good that the Americans have done and are still doing in France, but also because the foundation of the Memorial Home in honor of American nurses who died at the post of duty serves as an example and a lesson for us physicians, since we are still casting about for a plan to honor in a worthy manner our own dead

Regulation Concerning the Delivery of Milk in Paris

As I have mentioned in previous letters, France has much to learn from the United States in matters of hygiene We are somewhat behind in this matter, we must admit, and this is mainly due to our tendency to individualism No sooner is a new hygienic measure proposed, than protests begin to arise declaring that the measure will work a hardship on certain interests Further proof of this fact was in evidence when the question of regulations governing the delivery of milk in Paris came up It very often happens that milk destined for Paris consumption is delivered in a watered or impure condition One common cause for complaint that frequently gives rise to court proceedings and attracts particular attention is the delivery of milk in open cans at the doors of milk shops Between 4 and 5 o'clock in the morning, after the arrival of milk trains, the milk trucks deliver the retailer's supplies at his door, in one or in several cans of 10, 20, 30 or 50 liters, whatever he may have ordered If the order calls for 20 liters or a multiple of twenty, the cans are delivered full and are closed When the order calls for another amount, the quantity exceeding 20 liters or its multiple is delivered in a partly filled, open can Under such conditions what guarantee has the public that some one may not take a certain amount of milk from the partly filled can and try to conceal his theft by adding a like amount of water, taken from whatever source is convenient? The dangers of such a system are obvious Hygienists, and those concerned about the public health and especially young children, feel that they have cause to be solicitous However, when Monsieur Joseph Denais, a member of the city council, requested the prefect of police to issue an order that no delivery of milk be made to retailers without being put in cans sealed by the producers, the prefect of police told him that, as desirable as such a measure seemed to him, it would be difficult to enforce, because it was the regular practice of the wholesalers to deliver milk in 20 liter cans only Fortunately, Denais was not to be discomfited by this argument, and figuring that it is the privilege and duty of public authorities to intervene in such grave matters, he induced the municipal council to pass a resolution requesting the government to pass a law forbidding, three months from the date of its enactment, that any quantity of milk whatsoever shall be brought into Paris and delivered to wholesalers or retailers except as it shall be in closed and sealed containers

Cardiac Organotherapy

In one of my previous letters to THE JOURNAL I mentioned an interesting communication by Dr Martinet concerning cardiac organotherapy Dr Louis Renon, professor in the medical department of the University of Paris, has also reported to the Academy of Medicine the excellent results he has secured with cardiac organotherapy, which he has been using for the last ten years With a preparation consisting of powdered whole ox heart, Renon states that he obtained noteworthy results (when its use was sufficiently prolonged) in chronic cardiac insufficiency with myocardiac degeneration, especially in left cardiac insufficiency accompanied by extrasystolic arrhythmia It was administered in doses of from 0 5 to 1 gm per day, which represents from 2 to 4 gm of fresh myocardium Some patients have been subjected to this medication for several years Renon uses it in conjunction with all other cardiac remedies such as digitalis, spartein, strophanthus, Cecropia peltata, oubain, Adonis vernalis, hawthorn flowers, etc Cardiac organotherapy is a type of supplementary medication, which combines with all other forms of medication and constitutes the basis of the treatment The therapeutic effect manifests itself especially in diuresis, the abatement of dyspnea, the extrasystolic intervals and regularity of the pulse If ingestion becomes impossible on account of being followed by vomiting and in case it is necessary to obtain quick action, Renon resorts to injections of a lipoid-free extract of ox heart dissolved in physiologic sodium chlorid solution and heated to a temperature of 100 C This partial extract given in the form of injections has not the same therapeutic value by weight as the powdered whole heart administered by ingestion, larger doses are therefore required On the other hand, Dr Fiessinger has used cardiac organotherapy in treating three patients but

without the slightest success One patient was suffering from permanent slow pulse and the other two from insufficiency of the right cavities in connection with a mitral lesion

Work of the Pasteur Institute During the War

Dr A Calmette, assistant director of the Pasteur Institute, has just published in the *Revue d hygiène* an interesting article on the work of the institute during the war The most important feature to be mentioned is the activity shown by the service of serotherapy In July, 1914, the Pasteur Institute owned 273 horses In time of peace about 80 000 vials of various serums were produced monthly, and the institute had in refrigerators a stock of 1,158 liters of diphtheria antitoxin and 1,434 liters of antitetanic serum From the very first day after mobilization, that is, after most of the personnel had joined their respective regiments, demands for serums began to pour in, and especially for antitetanic serum, the production of which had to be stimulated, and at the same time, in order to meet the pressing needs of the French and allied armies, the preparation of antidysenteric, antimeningococcic, antipneumococcic, antistreptococcic, antiplague, antivenom and antigangrene serums was begun A few other serums also became necessary for bacteriologic serodiagnosis (typhoid fever, paratyphoid A and B, cholera, Malta fever, etc) As the supply of bottling machines was not equal to the demand, new ones had to be installed For a period of several weeks it became necessary to organize night shifts, and Sundays and rest days were eliminated for the time being The number of horses increased up to 1,462 Thus, from August 1914 to the end of 1918 6 000 000 doses of serum were produced for France alone, 3,700 000 doses being delivered gratuitously to the army and to the public charities This represented a value of approximately 10,000 000 francs that the Pasteur Institute contributed from its resources to the common fund for national defense In addition to this, nearly a million doses were furnished to Italy, 10 000 to Serbia 70 000 to Belgium, 40,000 to Roumania and 800 000 to the American army and the American Red Cross At the time of the German offensive in March and April, 1918, the Pasteur Institute was able to furnish 20 000 vials of antitetanic serum per day Some serums that were manufactured only in small quantities before the war became particularly useful in warding off epidemics among the allied troops on all fronts Thus 390,000 vials of serum against cerebrospinal meningitis and 518 000 vials of serum against bacillary dysentery were furnished by the Pasteur Institute

BELGIUM

(From Our Regular Correspondent)

Liege, July 7, 1921

Supplemental Indemnity for Belgian War Wounded

On account of the present high cost of living in Belgium, and acting on a suggestion from the minister of national defense the government has granted an additional indemnity or bonus to the war wounded Heretofore 100 per cent disability entitled a veteran to a pension of 3,600 francs According to the new regulation, disabled men are granted increases to their pensions as follows for from 60 to 65 per cent disability, 15 per cent increase, from 80 to 86 per cent disability, 20 per cent , from 90 to 95 per cent disability 25 per cent, and for 100 per cent disability a 30 per cent increase

Belgian Relief for Russian Refugees

At the request of Monsieur Depage the Belgian relief committee for the civilian population of Russia has furnished the international committee of the Red Cross a list of the goods forwarded by the relief committee to Russian refugees in Constantinople and neighboring countries in November, 1920, and April, 1921 The first shipment (November, 1920) comprised drugs, vaccines, serums, ampules, surgical instruments and accessories, amounting in value to 177,977 francs The second shipment was made up of clothing, dry goods, soap, sewing machines, bed linen, flannel goods, pencils, paper, pins, combs, barber's clippers, hammers, nails and kitchen utensils, also condensed milk, desiccated milk meat extracts, egg powder, etc, amounting in value to 241,196 francs and sufficient to supply the needs of 2,000 men, 1,000 women and 400 children

Increase of Pension for Tuberculous Soldiers

According to the pension laws, whatever may be the date of the final granting of their pension, soldiers suffering from tuberculosis of the lungs are entitled to demand an increase of pension if their condition becomes aggravated The percentage of disability shall be determined according to the seriousness of the infection from which they are now suffering Those concerned will be able to obtain an increase of pension corresponding to the difference between the percentage of disability then present and the percentage that served as a basis for the granting of the pension This increase of pension will be granted for one year, subject to the same conditions that govern temporary pensions and will consequently be renewable In determining the percentage of disability, the medical examiner will base his decision on the lung lesions the functioning of other organs and their influence on the applicant s earning capacity Tuberculosis of slow evolution, with satisfactory general condition, indicates from 25 to 50 per cent disability, pulmonary tuberculosis with marked stethoscopic manifestations affecting manifestly the general condition, 100 per cent disability advanced tuberculosis of the lungs and acute tuberculosis 100 per cent, and sequels of cicatrized pulmonary tuberculosis, from 5 to 25 per cent

Holland's National Health Insurance Bill

The importance that attaches to the general question of social insurance lends peculiar interest to the lively discussion taking place in Holland in connection with the proposed law pertaining to health insurance The bill seems to be viewed with favor by the general public and also by the medical profession If the bill becomes a law, it will guarantee medical care not only to the workingmen who according to the law of 1913 must be insured in the health insurance societies, but will include every one whose income does not exceed a certain limit It also provides medical care for all members of the family of the insured Health insurance funds shall never become dividend producing Medical care will not be refused even though the insured is to blame for the sickness The choice of the family physician will be permitted within certain limitations Fees will be paid by the insured at regular intervals on a capitation basis Free choice of specialists is allowed in the main with payment for each service rendered It is to be distinctly understood that any obligations binding physicians to a given health insurance society shall never be construed as constituting a dependent relationship whereby the principle of 'free choice shall be transformed into that of regularly "employed physician But free choice of physician shall not be taken to mean that patients may change physicians every day Aside from exceptional cases patients shall not change physicians oftener than once or twice a year To prevent abuses a certain control will also be exercised over the choice of specialists The capitation fees and the maximal number of insured persons to each physician will be fixed by definite regulations The income limit for health insurance, that is, the limit under which all must be insured, will doubtless be placed at 2 500 florins ($766.25) The maximal number of insured persons to each physician will probably be 4,000 and

the fees will amount to 4 florins ($1 23) This figure as fixed by the minister will constitute naturally only a minimum The physicians' fees must be settled by mutual agreement between the administrators of the funds and the medical organizations, and it is likely that the rate will be higher in the large cities The range of medical attention guaranteed by the proposed legislation is extensive It includes, besides ordinary treatments and medical care treatments by specialists (either office consultation or in the home), dental care, confinements (with midwife or, if need be, a physician) and hospital care (hospital, sanatorium, asylum) The best and most modern methods must be used in all cases (roentgen rays, laboratory examinations, isolation of those suffering from contagious disease, disinfection, proper mode of transportation of patients, etc) Naturally the plan will entail a very heavy expense The government will bear a portion of the expenses incurred by all the health insurance societies, irrespective as to whether self-created, established by physicians, communes, or otherwise, provided the conditions stipulated by the terms of the bill have been complied with The state will allow 075 florin per person insured for administration expenses It will pay a portion of the expenses incurred for hospital and special treatments, and it will give financial aid in the initial organization of societies The government will also grant subsidies to certain authorized therapeutic establishments that will admit for treatment under certain conditions patients insured in an authorized health insurance society

MEXICO CITY

(From Our Regular Correspondent)

July 24, 1921

Plague Outbreak at Tampico

Plague has appeared at Tampico, the oil port Since March 19, when the first case was recorded, to July 16, 164 cases of the disease have been reported with 108 deaths, i e, a death rate of 6585 per cent The epidemic seems to be under control, since in the last three weeks there have been reported only three, nine and two cases, respectively, with no deaths This outbreak is attributed to the fact that for one reason or another the deratization measures instituted last year, when plague prevailed at Vera Cruz and one case occurred at Tampico, were not applied with the necessary amplitude to control the disease The personnel in charge has been much increased, a weekly total of rodents ten times as large as before has been caught, and antiplague vaccination, a measure on which our authorities place great dependence, has been enforced In view of the tact and competence shown last year by Dr Carl Michel of the U S Public Health Service in the antiplague campaign and as adviser *ad honorem* to the Mexican Public Health Department, the United States government was requested to send him again to cooperate in the antiplague campaign This request was granted by the American government, and on this account we have had the pleasure of seeing again among us Dr Michel, who is already at work in the invaded port

Yellow Fever

As might be expected, when we keep in mind the cases of this disease reported in Mexico during the last two years and the first months of this year, as soon as warm weather began, new cases were reported, but the interesting feature has been that none of them were found in the towns where campaigns have been conducted against mosquitoes, all the cases occurring in the small towns where no such work had been carried out For instance, in the oil camp called Alamo there were eight cases and eight more at Cosamloapam Of the first, one was transferred to Tuxpam, and of the others, three went to Vera Cruz, but in neither town have any yellow fever cases occurred This fact has all the validity of an experiment according to Dr Bert W Caldwell, who thinks that, owing to the antilarval measures carried out and while the mosquito index is kept as low as at present, these places will be free from yellow fever It may be added that as soon as these cases and the one at Alvarado were reported, the department of public health, with the valuable cooperation of the representatives of the International Health Board, extended the antimosquito campaign to the infected places

Personal

Dr T C Lyster, director of the International Commission against yellow fever, has returned to Los Angeles after spending a few days in Madrid——Dr E I Vaughn, a member of the same commission, who has been in Guatemala, arrived in this country to assist in the yellow fever campaign——Dr G Mendizabal, president of the Mexican Medical Association, has returned to this country after a trip to the United States, where he visited Boston and other Eastern towns——Drs R Silva and G Diaz Lombardo, president of the Academy of Medicine, have been appointed members of the superior board of health——Dr F Castillo Najera has been appointed managing editor of the *Heraldo de Mexico,* an important political journal——Drs J T Rojas, professor of the School of Medicine, and J L Torroella and Mr D T Iglesias, a pupil of the medical school, have left for Spain to engage in graduate medical work; the last mentioned will complete his course in the Central University of Madrid——Drs R Santa Marina and C Guajardo have left for Brussels, where they will act as Mexican representatives in the Infant Welfare Congress

BERLIN

(From Our Regular Correspondent)

July 4, 1921

Blind Men as Factory Workers

Moving pictures have been presented of late that show, in a surprising manner, how extensively blind men can be utilized in large industrial plants The most dangerous and complicated maneuvers about the machines are mastered with a skill and an adroitness that are astonishing We have here an example of the not at all uncommon phenomenon that organic defects are compensated for, and even overcompensated, by the enhanced capacity of other organs Professor Silex, the Berlin ophthalmologist, was the first to hit on the idea of putting to a practical test the afore-mentioned law of adaptation and compensation and to use blind men as factory workers in the industries The Siemens-Schuckert Works in Siemensstadt, near Berlin, were among the first to enter into the plan The unfortunate victims of the war (for they were, for the most part, the ones concerned), thrown out of their former sphere of activity as citizens, soon developed greater interest in machine work, which kept their minds and bodies constantly employed, than they had shown for the monotonous work of brush making or chair weaving in the reeducational institutions for the blind Then again, it soon became evident that the lack of distraction (for surrounding distractions are always sure to affect considerably the rate of production of the seeing workman) was a factor favorable to the application of the blind So, in the course of time, cases arose in which the earning power of the blind machine-worker was not only much greater than his former earnings by ordinary manual labor, but even exceeded the performances of his fellow workmen who were gifted with sight The example set by the Siemens-Schuckert Works soon found emulators, and today blind men are employed in almost all the larger industrial plants of Germany, where they do the

most complicated kinds of machine work It has been found feasible to use blind men in the manufacture of electrotechnical apparatus, the tobacco industries, ceramics, and candy and paper-box factories The onlooker is for the moment astounded to see a man who is entirely bereft of sight operate a rapidly rotating circular saw, and with this dangerous machine manufacture an almost countless number of glass rods Or, blind men may be seen operating drilling machines in connection with the manufacture of optical instruments, watches, machinery and various instruments, occasionally they are in charge of two machines, both in operation It is an interesting fact that not only the blind men adapt themselves to the machines, but also the machines are fitted with safety appliances or accessory parts in order to make them more adaptable to the use of blind men The supplying of accessory parts becomes particularly necessary when the workman has lost not only his sight but some other organ as well For example, a blind man who has lost one arm becomes able to operate a thread-cutting machine by the substitution for the ordinary lever of a wheel that is operated by foot by means of a wire cable

Induction of Temporary Infertility by Injection of Semen in the Blood Stream

In an article in the *Umschau,* R Dittler discusses the question as to whether the union of the female ovum with the male germinal cell and the development of the impregnated ovum by the secretions of the tissue can be artificially influenced There are two possible routes to be considered The one has to deal with the glands of internal secretion and the possibility of changing their activity by bringing certain definite influences into play The other method is concerned with the production of defense substances in the blood stream (as in other forms of protective vaccination), whereby an influence is exerted on the fecundation process It is the latter method that Dittler discusses more particularly He endeavored to render female rabbits unsusceptible to spermatozoa by the injection of living germinal cells That the blood of animals that has been previously treated with a suspension of germinal cells exerts an injurious influence on spermatozoa of the same species, has been shown by Metschnikoff and Landsteiner, as well as by a number of other investigators But in their experiments it remained an open question whether such a protective effect toward spermatozoa would become manifest in connection with the act of copulation

By using not only the semen but also an extract from the whole testis, former investigators secured, as did Dittler, temporary sterility However, because of the use of the extract, their experiments did not lead to sufficiently clear results In his experiments, Dittler used rabbits of various kinds, but always couples that had produced young at least once, and of the females he chose those that had not only readily conceived but also carried their young to term Pure seminal fluid served as the causative agent for the formation of the defense substances The seminal fluid was secured by causing a female to be covered in which the first portion of the uterus had been ligated after which copulation it was possible to draw up into a glass tube almost all of the seminal fluid that had entered After dilution of the seminal fluid with a solution of salts resembling the secretions of the tissue, the mixture was injected into a vein of the ear The injections were repeated at definite intervals, and after such preliminary treatment and the lapse of a certain time, the females were left with the males from which the seminal fluid for the injections had been secured It was observed that, after copulation had taken place two or three times, which usually sufficed for impregnation, the females that had been treated generally refused the approach of the males The experiments showed that it is possible by means of injections of spermatozoa to render females temporarily infertile However, the sterility lasted only four months at the most Comparative experiments were performed with human spermatozoa When these were injected into the blood stream of a rabbit it still remained fertile The arrest of fertility is, therefore, not brought about by the injection of heterogenous semen but only by the treatment with homogenous seminal fluid In this connection, the question arose whether through such treatment with injections of spermatozoa any disturbances in the periodic sexual processes within the ovary were produced Therefore, Dittler observed rabbits that had been injected with homogenous seminal fluid By the appearance of the surface of the ovaries exposed by opening the abdominal cavity, it can usually be established whether or not the ovaries are functioning normally As the ovaries seemed, for the most part, to be unchanged, Dittler takes the view that by the injection of germinal cells temporary infertility may well be induced without any evidence of disturbance in the periodic activity of the ovaries

History of Hygiene of the Eye

At a meeting of the Verein fur Geschichte der Naturwissenschaften und Medizin, Geheimrat Julius Hirschberg of Berlin, the Nestor of German ophthalmologists, delivered a lecture on the history of the hygiene of the eye That the value of the eye was appreciated even in gray antiquity, Hirschberg made evident by quoting well known Biblical sayings and also edicts contained in the oldest known code of laws that of Hammurabi, king of Babylonia, which dates back to the year 2200 B C In the Hammurabi Codex we read "If a physician operates on a fistula of the eye and the eye is preserved, there shall be paid unto him 10 shekels of silver But if the eye is not preserved, both his hands shall be chopped off" However, scientific hygiene of the eye is only two centuries old Hygiene of the eye was unknown to Greek physicians, for they were not acquainted with the optical structure of the eye nor with ground glasses From Hippocrates work on prevailing diseases we learn that marjoram and lentils are injurious to the eyes a view that again appears in the twelfth century A D in a didactic poem at Salerno Galenus recommended for weakness of vision a powder composed essentially of pumice stone, which was also said to have prophylactic value Oribasius recommended for eye affections fennel water *(aqua foeniculi),* which is still known as a home-treatment remedy For artists who painted miniatures on gems, whose work is still highly prized, a special eye ointment was prescribed Magnifying glasses were not known at that time The middle ages did not bring much that was new Eating the eyes of birds of prey was recommended for the strengthening of vision Convex lenses did not become known in Europe until the thirteenth century But spectacles were recommended only as a last resort, in case ointments failed to bring the desired relief The concave lenses for myopic persons were introduced much later than the convex lenses Kepler was the first to recognize the dioptric structure of the eye, and it was he who set up the theory of spectacle lenses "Vision is produced by the fact that a picture of the whole hemisphere of the world is thrown on the white wall of the concave retina" The first hygiene of the eye established on a scientific basis, we owe to Hamberger, professor of mathematics in the University of Jena who in 1696 wrote a description of the eye and declared that the cure of optical defects must be on an optical basis He warns against a sedentary mode of living and against children reading too much. The discovery of the ophthalmoscope the middle of last century, was most influential in bringing about further progress in the hygiene of the eye.

Marriages

ALFRED MORRELL BIDWELL, Captain, M C, U S Army, Jersey City, N J, to Miss Florence Hannah Lindquist of Minnesota, at Washington, D C, July 22

WILLIAM CONRAD G HENSKE, St Louis, to Miss Margaret Yates of Chippewa Falls, Wis, at Kansas City, Mo, June 15

CHRISTIAN HENRY DEWEY, Captain, M O R C, to Miss Edna Thompson, both of Des Moines, Iowa, recently

JOHN A LOGAN, Captain, M C, U S Army, Pittsburgh, to Miss Ruth Bronson, at Chevy Chase, Md, August 3

WALTER J PENNELL, Washington, D C, M C, U S Navy, to Miss Mary E Eliason, at Washington, July 6

ANDREW J PAULSON, Watertown, S D, to Miss Mina Nelson of Devils Lake, N D, in June

ROLLA I STEWART, Wendell, Minn, to Miss Clarice Adelia Stetton, Elbow Lake, Minn, in June

JERRY M JAMES, Hooversville, Pa, to Miss Margaret M Veil of Scalp Level, Pa, July 13

SAMUEL A MYERS, Urbana, Ill, to Mrs Myrtle Crays of Sidell, Ill, at Chicago, June 20

CARL G BRETTHAUER, Boone, Iowa, to Miss Muriel Amish at Des Moines, Iowa, April 14

OKLA W SICKS, French Lick, Ind, to Miss Norma Jane Sutton of Indianapolis, July 14

JOHN RUSSELL, Des Moines, Iowa, to Miss Sadie Ann Caquelin of Omaha May 12

ANDREW S MACDOUGALL, Lewistown, Mont, to Miss Muriel Grant, Anaconda, in June

ANGELL SIGHART HOILAND to Miss Clara E Overby, both of Argyle, Minn, in June

GEORGE C PASCHALL to Miss Bessie Lee Wilson, both of Franklin, Tenn, June 30

WILLIAM B WARTHEN to Miss Christine Gower, both of Clayton, N C, June 29

CHARLES STEINHAUSER to Miss Helen Rosenstein, both of New York City, July 17

ANDREW J MINAKER to Miss Gertrude Granfield, both of San Francisco July 15

CLAUDE B SQUIRES, Charlotte, N C, to Miss Maude Shute, Monroe, N C, July 8

HARRY KENNY, Watertown, S D, to Miss Agnes Smith of Pierre, S D, in June

WILLIAM HUNTER BARR to Miss Estella Maust, both of Wells, Minn, in June

HAROLD H FESLER, St Paul, to Miss Ruth Ruggles of Oak Park, Ill, recently

LOUIS W TOLES to Mrs Maude M Brown, both of Lansing, Mich, July 30

JOHN GARFIELD FROST to Miss Mae LaNell, both of Chicago, June 29

Deaths

George Knowles Swinburne ⊕ New York City, College of Physicians and Surgeons (Columbia University), 1885, member of the American Association of Genito-Urinary Surgeons, the American Urological Society, and the New York Academy of Medicine, genito-urinary surgeon to St Mark's Hospital and the Good Samaritan Dispensary, dropped dead while playing tennis, July 23, at Rye, N Y, from heart disease, aged 63

Reuben Saunders Toombs, Memphis, Tenn, Washington University Baltimore 1868, former president of the Mississippi State Medical Association, was one of the founders of the University of Tennessee, professor of materia medica clinical medicine, and of medical ethics at the University of Tennessee, until 1918, Confederate veteran, died, July 15, in a private sanatorium at Lexington, Ky, aged 77

Louis Favrot Reynaud, New Orleans, New Orleans School of Medicine, 1866, Confederate veteran, formerly physician to the Institute for the Blind, Baton Rouge, La, instructor in physical diagnosis at Tulane University, New Orleans, 1891-1894, emeritus professor of materia medica, therapeutics, and clinical medicine, Tulane University, 1894-1905, died, July 16, aged 79

Herbert Lee Gray, New York City, Johns Hopkins University, Baltimore, 1906, genito-urinary surgeon to the New York Hospital Dispensary and chief of the genito urinary clinic of Demilt Dispensary, member of the American Urological Society, and member of the Medical Society of the State of New York, died suddenly, July 23, from heart disease, aged 39

Edwin R Smiley, Philadelphia, Philadelphia College of Pharmacy, 1872, Jefferson Medical College, 1881, coroner of Camden County, 1890-1893, deputy coroner of Philadelphia County, 1906-1909, was treasurer of the Philadelphia Retail Druggist Association, died, July 19, from a complication of diseases

Robert Bancker Talbot, New York City, College of Physicians and Surgeons (Columbia University), New York City, 1877, member of the New York Obstetrical Society, associate surgeon at the Women's Hospital, New York, died, July 16, from pneumonia, at Raquette Lake, N Y, aged 69

John P Shelby, Yuma, Ariz, Jenner Medical College, Chicago, 1904, member of the Arizona State Medical Association, while suffering from a nervous breakdown, committed suicide, July 24, at Venice, Calif, by severing his jugular vein with a scalpel, aged 63

Frank Hamilton Todd, Cleveland, Western Reserve University, Cleveland, 1876, postgraduate work College of Physicians, New York, specialized in children's diseases, assistant surgeon marine hospital service, Fairport, Ohio, 1888-1892, died, July 16, aged 72

Charles H McCarthy, Lowell, Mich, University of Michigan, Ann Arbor, 1921, was one of three graduates picked from American universities for the staff of the Mayo Hospital Rochester, took overdose of a poisonous drug in a Chicago hotel, July 21, aged 26

George Brinton Thomas, Bismark, Ill, Bennett Medical College, Chicago, 1914, served overseas in the M C, U S Army during the World War, was killed when his automobile was struck by a train at a road crossing, near Bismark, Ill, July 8, aged 42

Albert H Lamphear, Independence Mo, Medical Department of the City of New York, 1859, served as regimental surgeon, One Hundred and Sixth Illinois Volunteers, in the Civil War, died in June, at Marion Stations, Mo, aged 92

Logan Lindsay Banner, Castlewood, Va, College of Physicians and Surgeons, Baltimore, 1884, served as member of the United States Board of Medical Examiners for Pensions, 1897-1905, died, June 29, from general paresis, aged 63

Edwin Lorendus Bebee, Buffalo, College of Physicians and Surgeons (Columbia University), New York 1900, surgeon in U S Army, 1904 until close of World War, chief city surgeon, Buffalo, died, July 15, aged 51

Lindsey L Whitesides ⊕ Franklin, Ind, University of Louisville (Ky), 1883, Spanish War veteran, member state board of health, died, July 17, at the Methodist Hospital, Indianapolis, from pneumonia, aged 61

Paul A Ramsel, Shiner, Texas, University of Louisville (Ky), 1894, was found dead with a bullet wound in his heart and a rifle at his side in a vacant lot near the Ramsel Sanitarium, July 9, aged 46

Lamartine Orlando Hicks ⊕ Jackson, Ala, University of Alabama, Tuscaloosa, 1871, local surgeon of the Southern Railroad at Jackson, died in July, at the Mobile Infirmary, Ala, aged 72

Andrew C Jackson, Tulsa, Okla, Meharry Medical College Nashville, Tenn, 1904, was shot while running from his burning home, during the race riots in Tulsa, May 31, aged 42

Mary Anne McCay ⊕ Northumberland Pa, Womans' Medical College of Pennsylvania, Philadelphia, 1887, died, July 26, at Sunbury, Pa, from chronic interstitial nephritis, aged 63

Frederick W Lake, Omaha, University of Pennsylvania, Philadelphia, 1901, member of the Nebraska State Medical Association, served in the World War, died, July 10 aged 46

Orville C Omohundro, Nashville, Tenn, University of Nashville, 1872, Confederate veteran, died, July 15, from heart disease, at his country home near Mt Juliet, aged 76

Martin Grace Meehan, Chicago, Rush Medical College, Chicago, 1885, member of the Illinois State Medical Society, died, July 24, from cancer of the gallbladder, aged 70

⊕ Indicates *Fellow' of the American Medical Association*

Isaac M Cornell, Wappingers Falls, N Y, University of the City of New York, 1877, member of the Medical Society of the State of New York, died, July 16, aged 70

Jefferson Davis Fenton, Portland, Ore, University of Oregon, Portland, 1889, disappeared on March 13, body was recovered from Wilamette River, July 7, aged 58

Henry Herman ⊕ New York, Bellevue Hospital Medical College, New York, 1883, died, July 12, at his summer home at Long Branch, N J, from heart disease, aged 60

Clara H Rogers Rutter, Lawrence, Mass, Boston University (Homeopathic), Boston, 1879, practicing physician for nearly half a century, died, July 15, aged 67

Julius Haas, Altenheim, Calif, University of Vienna, Austria, 1861, died at the Altenheim Institution, of which he was house physician, May 31, aged 85

Elias Galley Brown, Allaben, N Y, College of Physicians and Surgeons, New York, 1895, died, June 28, in New York City, from cancer of the stomach, aged 50

David W Crosthwaite, Altoona, Pa, University of Pennsylvania, Philadelphia, 1881, practicing physician for nearly half a century, died, July 18, aged 65

Maurice Dorewitz ⊕ Buffalo, University of Illinois, Chicago 1919, died, July 9, from pneumococcic meningitis, at the Buffalo General Hospital, aged 26

Paul Armstrong, Muncie, Ind, Barnes Medical College, St Louis, 1904, served in the M C, U S Army, during the World War, died, July 18, aged 44

Samuel C Sims, Memphis, Tenn, Vanderbilt University, Nashville, 1893, died, July 14 from serious complications, following a long illness, aged 59

Jesse L Hill, Lowell, Ind, Rush Medical College, Chicago, 1875, died in July, when a rib punctured a lung, caused by a fall from a ladder, aged 77

Edmund Hopkins Barber, Chautauqua, N Y, New York Homeopathic Medical College, New York City, 1877, died suddenly, July 6, aged 76

George H Astler ⊕ Elmwood Place, Ohio, Cincinnati College of Medicine and Surgery, 1890, died, July 6 from heart disease, aged 54

William H Ross, Grand Rapids, Mich, American Eclectic Medical College, Cincinnati, 1888, died, July 14, from heart disease, aged 76

James W McCracken, Sulphur Springs, Ark, University of Michigan, Ann Arbor, 1866, Civil War veteran, died in April, aged 84

Henry L Pace, Exeter, Calif, Missouri Medical College, 1890, died in Chicago, May 23, from acute myocarditis, aged 68

Samuel B Gordon, Salinas, Calif, University of the City of New York, 1889, died recently, from uremic poisoning, aged 53

Albert Herman Blocklinger ⊕ Dubuque Iowa, State University of Iowa, 1894, died, July 20, in a local hospital, aged 53

Arthur Jukes Johnson, Toronto, Canada, University of Toronto, 1870, M R C S (Eng), 1871, died, June 9, aged 72

Frederick Graves, Hinkley, Ill, Bennett College of Eclectic Medicine and Surgery, Chicago, 1881, died in Tennessee, July 19

William H Wood, Smithfield, Ohio, Medical College of Ohio Cincinnati, 1883, died, July 2, at his daughter's home, aged 73

Harrison Fitzpatrick, Goodletsville Tenn, University of Nashville, 1871, died, May 23, from Bright's disease, aged 76

Nathaniel N Hurst, Chicago, Jefferson Medical College, Philadelphia, 1873, died, July 25, from heart disease, aged 75

Clement North Guy, Greene N Y, Hahnemann Medical College and Hospital of Chicago 1883, died, June 21, aged 81

J R Dickey, Columbus, Ga, Atlanta Eclectic Medical College, died at Breman, Ga, from nephritis, aged 36

Oscar Eason ⊕ Goldsboro, N C, University of North Carolina, Chapel Hill, 1910, died, June 29, aged 37

Henry Newton Burr, Williamson, N Y (license, New York State Society, 1863), died, June 12, aged 83

William B Ely, Ainsworth, Neb, University of Michigan, Ann Arbor, 1878, died, June 23, aged 79

Silas Addison Austin, Los Angeles, Rush Medical College, Chicago, 1877, died, June 17, aged 78

The Propaganda for Reform

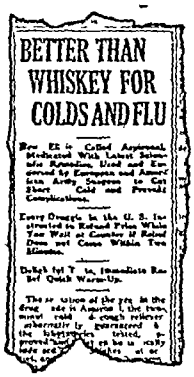
IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

Hoffman's Celebrated Mixture—A quantity of "Dr Hoffman's Celebrated Mixture" shipped by Solomons Co, Savannah, Ga, in February, 1919, was declared misbranded The federal chemists reported that the article consisted essentially of an alcoholic solution of copaiba and opium It was falsely and fraudulently sold under the claim that it was an effective remedy for gonorrhea and gleet In June, 1921, a decree was entered by the court ordering the destruction of the product—[*Notice of Judgment No 8870, issued May 18, 1921*]

Aspironal—In March, 1919, the Aspironal Laboratories Atlanta, Ga, were alleged to have shipped a quantity of "Aspironal" which was misbranded The Bureau of Chemistry reported that analysis showed the stuff to consist essentially of a solution containing sodium salicylate, cascara, a small amount of mydriatic alkaloids (probably from belladonna), and a trace of menthol The government charged that the article was misbranded, in that the statements appearing in and on the labels, bottle circulars, etc, regarding the alleged curative and therapeutic effects of the product, were false and fraudulent, and these statements were made by the Aspironal Laboratories knowingly and in wanton and reckless disregard of their truth or falsity, and with intent to deceive the purchaser thereof The stuff was further misbranded in that the packages failed to give a true and correct statement of the quantity and proportion of alcohol it contained *In June 1920, a jury returned* a verdict declaring the goods misbranded as alleged Judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[*Notice of Judgment No 9020, issued May 25, 1921*]


BETTER THAN WHISKEY FOR COLDS AND FLU

Lozon Pills—A quantity of these pills were alleged to have been consigned by the Lafayette Co, Berlin, N H, between June, 1919, and June, 1920 The federal chemists reported that analysis showed the pills to consist essentially of iron (ferrous) carbonate, nux vomica, damiana, arsenic and a laxative plant drug The trade package bore such claims as

Restores Vitality to weak men whether lost by excesses of any kind will tone up weak men gives youthful ardor

No cure no pay give new life recommended for young middle age and old men

These and similar claims were declared false and fraudulent and in November, 1920 judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[*Notice of Judgment No 8922 issued May 23, 1921*]

La Nobleza and Sin Igual—In July, 1920 Juan Gandara, Albuquerque, New Mexico, shipped a quantity of 'La Nobleza" and 'Sin Igual" which was misbranded The federal chemists reported that analysis showed La Nobleza to be, essentially, a solution containing plant extractives, including saponin (sarsaparilla), a plant laxative, sugar, alcohol, water and traces of alkaloids The bottle label of La Nobleza represented that preparation to be an effective treatment, remedy

and cure for scrofula, cancer, leprosy, syphilis, tuberculosis, and all impurities of the blood These claims were, of course, declared false and fraudulent

The federal chemists reported also that Sin Igual was found to consist of a watery solution containing gum (probably from althaea), a plant laxative, licorice, and faint traces of alkaloids Sin Igual was represented as an effective treatment, remedy and cure for gravel, suffocation of the chest, retention of urine, stone in the bladder, yellow fever, jaundice and diseases of the kidney, liver, bladder, chest and womb These claims were declared false and fraudulent

When this case came on for trial before a court and jury it was brought out that eight days before the shipment of these two consignments on which the prosecution was based, Juan Gandara had been convicted in the United States District Court for a similar violation of the federal Food and Drugs Act When the present case came to trial, the jury returned a verdict of guilty, and the court sentenced Juan Gandara to serve one year in jail, and to pay the cost of the proceedings—*Notice of Judgment No 9008, issued May 25, 1921*]

Silverstone's Internal Remedy—H Planten & Son, Brooklyn N Y are alleged to have shipped in July, 1919, a quantity of this product which was declared misbranded The Bureau of Chemistry reported that analysis showed the article to consist of capsules containing essentially resins and volatile oils, including copaiba and cubebs The article was labeled in part

Dr Silverstone s Internal Remedy (Klotz B 999 Capsule Form) Prepared for The Pioneer Drug Co Seattle Wash 36 capsules in box

'For the relief of Gonorrhea Gleet Stricture and all unnatural discharges in Male and Female Does not produce nausea as do most internal remedies of this nature used in connection with our injection will cure the most obstinate cases'

These claims were declared false and fraudulent and in January, 1920 judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed —[*Notice of Judgment No 8902, issued May 23, 1921*]

Yellow Pine Compound—In April 1919, David F H McDowell, trading as the Yellow Pine Extract Co, Pittsburgh, Pa, was alleged to have shipped a quantity of Yellow Pine Compound which was misbranded The Bureau of Chemistry reported that analysis showed the article to consist of turpentine mixed with magnesia (magnesium oxid) and a small amount of jalap The product was falsely and fraudulently represented as an effective treatment, remedy and cure for rheumatism and sciatica, "when, in truth and in fact, it was not" In January, 1921, McDowell entered a plea of *nolo contendere* and was fined $250—[*Notice of Judgment No 9039, issued May 25, 1921*]

Thomas Emmenagogue Pills—A quantity of this product alleged to have been shipped in January, 1920, by the Palestine Drug Co, St Louis, Mo, was declared misbranded The government chemists reported that analysis showed the pills to consist essentially of (iron ferrous) sulphate, aloes and an unidentified alkaloid The pills were labeled in part

Emmenagogue Pills recommended for Amenorrhea and other Menstrual Troubles beginning treatment before the regular monthly period continue until relief is obtained

These claims were declared false and fraudulent since the article did not contain an ingredient or combination of ingredients capable of producing such effects In January, 1921 judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[*Notice of Judgment No 9025, issued May 25, 1921*]

Nyal's Prescription "23" and Nyal Prescription "23" Pills—The Nyal Co, Detroit Mich, are alleged to have shipped in October, 1918 a quantity of these two preparations which were misbranded "Nyal s Prescription '23' " when analyzed by the Bureau of Chemistry was found to be a liquid consisting essentially of zinc sulphate, boric acid, Golden Seal glycerin and water "Nyal Prescription '23 Pills" were found by the same chemists to consist essentially of iron (ferrous) sulphate, copaiba balsam oleoresin of cubebs and alkaloidal material These two preparations were falsely and fraudulently recommended for gonorrhea and gleet In October, 1920 the court declared the products misbranded and directed that they be destroyed—[*Notice of Judgment No 8995, issued May 24, 1921*]

Correspondence

INFORMATION ON EFFECTS OF WAR GASES

To the Editor—I enclose copies of a letter and questionnaire pertaining to the subject of the after-effects of warfare gas on the human being These have been sent to the secretaries of the various county medical societies throughout the United States in an endeavor to obtain through them information relative to this most important matter In carrying out this work, over 2,500 letters have been mailed, and of this number a large percentage have already been answered, showing conclusively that medical men throughout the United States are greatly interested in the subject It is realized that many medical men who have had extensive experience in this work and whose views on the subject should be obtained cannot be reached through this source, and, in order to reach them the thought has arisen as to the possibility of utilizing the columns of THE JOURNAL for this purpose

In connection with this subject it might be of interest to know that at present over 200,000 ex-service men are applicants for pension, attributing gas as a source of their disability It might also be of interest to know that of 1,200 applicants for pension for lung troubles alone, examined in the Bureau of War Risk Insurance, over 30 per cent claim warfare gas responsible for their disability These cases were not selected, but taken at random

In view of the fact that gas has been decided on as one of the weapons for future wars, the necessity for knowing the after-effects resulting from this method of warfare is extremely important Although much research work has been done in the laboratories throughout this country and Europe, relative to this matter, the results are not satisfactory and it is believed that the only means of obtaining reliable information is that which can be obtained from medical men of the world who have had actual experience with these cases

Readers having any definite information on the subject may fill out the questionnaire and mail to the Chief of Medical Section, Chemical Warfare Service, Washington, D C.

H L GILCHRIST, M D, Washington, D C.
Lieutenant Colonel, Medical Corps, Chief, Medical Section, Chemical Warfare Service

The letter and form of questionnaire follow

The late war with the Central Powers introduced several new and important weapons such as the submarine air bomb tank flame thrower and war gas All of these were important agents in the production of new types of traumatism especially gas which viewed from the standpoint of the medical man was the most important and directly responsible for thousands of casualties occurring in our forces operating in France

Owing to the fact that gas was a wholly new and unknown factor affecting principally the respiratory system it has been difficult to determine the amount of damage done not only to the system but also to other internal organs of the body For this reason gas is now and will unquestionably for years to come be blamed for many ailments for which it is in no way responsible Unfortunately medical literature, both domestic and foreign relative to the after effects of gas on the internal organs of the body is rather negative.

Prior to the discharge of many gassed soldiers undergoing treatment in the hospitals of this country the reports in the Surgeon General s Office showed that a large number of them complained of tachycardia, pain in the chest dyspnea sweating and asthma. Insufficient changes in the respiratory tract were found to account for these symptoms complex and it was the opinion of many of the medical officers who treated these cases that the symptoms were the expression of a neurosis introduced on the suggestion of gassing It was also the opinion of these medical men that the neurosis was a defensory reaction on the part of

the individual as the so-called shell shock cases were in a large measure a defense action on the part of soldiers who had been subjected to high explosion missiles on the field of battle

At Fort Grant in 1919, a board of medical officers of the army examined over 2 000 men who were gassed and after careful individual and group examinations reported the following definite conclusions

(a) That gas victims irrespective of the type of the gas and severity of attack sustained showed no marked predisposition toward pulmonary tuberculosis or toward the reactivation of a healed or quiescent lesion

(b) That gas victims presented little evidence of material destruction of lung tissue

Notwithstanding the report of this board and the opinions of others who have given the subject much study and who concurred in the findings of the Fort Grant board former service men are breaking down at an alarming rate from tuberculosis and lung troubles and a large percentage of them attribute their conditions to the remote effects of war gases

There is no doubt that many ex soldiers are suffering from the ill effects of warfare gases but on the other hand, a large number are not and in justice to them and to the government it is of the greatest importance to know the exact after effects of this new war weapon

It is believed that the only logical means of obtaining this information is from medical men who have encountered cases of this character, and it is felt that the best way of reaching them is through the different medical societies To that end I am addressing this communication to you you being the secretary of the medical society in your district and if not asking too much I wish you would refer this matter to the members of your society who have had experience with cases of this character I am also inclosing a questionnaire to be used in connection with their reports

It is intended to publish a complete summary on the results of this work mentioning the names of the societies and individuals contributing but if for any reason it is desired to withhold the names of contributors the request will be so honored

QUESTIONNAIRE PERTAINING TO THE AFTER EFFECT OF WARFARE GASES

Place
Date

APPROXIMATE NUMBER OF GASSED CASES SEEN AND EXAMINED

The replies to the following questions to be based on clinical observations made when treating persons who claimed to be suffering from conditions resulting from inhaling warfare gases They do *not include* conditions resulting from mustard gas burns on the external body *surface*

As a result of my experience in treating cases of persons claiming to be suffering from the after effects of gas poisoning I am of the opinion that warfare gases do or do not permanently affect

	Yes	No
The brain and central nervous system		
The eyes		
The ears		
The larynx		
The vocal cords		
The larger bronchi		
The smaller bronchi		
The lung tissue		
The *heart*		
The blood vessels		
The composition of the blood		
The kidneys		
The organs of digestion		
Produce a bronchiectasis		
Produce emphysema		

That there is any relation between the after effects of gassing and

Tuberculosis		
Asthma		
Chronic bronchitis		
Nephritis		
Neurosis		
Psychoneurosis		
Effort syndrome		
Gastritis		

Report of necropsy findings statement of conditions believed to be due to the after effects of warfare gas.

"RELATION OF THE LIVER AND THE PANCREAS TO INFECTION OF THE GALLBLADDER"

To the Editor —With regard to the conclusions from experiments by Mann made by Dr Judd in his recent paper on the above subject (THE JOURNAL, July 16 p 197), certain suggestions seem obvious

1 Since none of the intra-abdominal organs are rigid, the intra-abdominal pressure, whether normal or increased, must affect them all equally

2 The highest pressure that could produce propulsion of the bile into the pancreatic duct would be the contractile pressure of the gallbladder or the secretory pressure of the liver, whichever is greater, since the increased intra-abdominal pressure caused by contraction of the abdominal muscles and of the diaphragm during deep respiratory movements or struggling or retching would increase the absolute pressure in the pancreatic duct, common bile duct, gallbladder, and all other intra-abdominal organs to the same degree

3 Therefore, the highest bile pressure which need be considered in its effect on the pancreas would be the difference between the pressure of bile in the common duct under the conditions of Dr Mann's experiments and the intra-abdominal pressure taken simultaneously

It would therefore be reasonable to conclude from these observations and from experiments in injecting bile into the pancreatic duct that the bile never under any condition produces damage to the pancreas because of the pressure under which it is placed

R L REYNOLDS, M D, Oak Park, Ill

PATHOLOGY OF BOTULISM

To the Editor —At various times during the last few years, in discussing the pathology of botulism, I have referred to the peculiar cellular thrombi which are found in the blood vessels of various parts of the body. These thrombi were first observed by Ophuls in the blood vessels of the brain of a human victim of botulinus intoxication, and were described in the *Archives of Internal Medicine* (**14** *589 [Oct.] 1914*)

In 1915 and 1918 I described a series of observations of experimental botulism in animals, and recorded several outbreaks of botulism in human beings It was found that in the tissues of a large percentage of animals that survived the administration of toxin for more than twenty-four hours, and in those of six of seven human victims whom I had opportunity to examine postmortem, there were thrombi which were identical with those described by Ophüls My conclusion was that cellular thrombi are characteristic of botulinus intoxication, and that their presence in the tissues is strong evidence that death has occurred from botulism

My further observations have confirmed my belief that these cellular thrombi occur in the great majority of cases in which patients have died from botulism, but two specimens have recently been brought to my attention which prove that they cannot be considered pathognomonic of the intoxication

The first specimen was obtained in England from Lieut.-Col Duncan Graham at No 4 Canadian General Hospital, and consisted of sections from the tissues of a sergeant who died of pneumonia after exposure to mustard gas Many of the blood vessels of the lungs and peribronchial tissues contained thrombi which were studied with leukocytes and which were very similar to if not identical with, those which are found in botulism

The second specimen was obtained from Dr William Ophuls at Stanford University Medical School and consisted of sections from the brain of a patient who had succumbed to a typical but prolonged attack of epidemic encephalitis The predominating feature of the tissues was the very marked perivascular infiltration with round cells, but, in addition a number of the blood vessels contained cellular thrombi which were practically identical with those observed in botulism

The demonstration of these thrombi in the latter case is of particular interest, since epidemic encephalitis and botulism are conditions in which the differential diagnosis during life is sometimes very difficult It was believed that the presence of perivascular infiltration, on the one hand, and

of cellular thrombi on the other, afforded conclusive differentiation by histologic examination of the tissues after death, but it is now apparent that this is not reliable

ERNEST C DICKSON, M D, San Francisco

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed Every letter must contain the writer s name and address but these will be omitted on request.

PROTECTION OF RED BLOOD CELLS AGAINST HEMOLYSIS

To the Editor —Will you kindly send me a description of a method of preventing hemolysis in red blood cells A method was described but I have been unable to locate the reference

S T R M D Missouri

ANSWER—This subject was discussed by Carl L A Schmidt and G F Norman in the *Journal of Infectious Diseases* **27** 40 (July) 1920, in an article entitled, "On the Protection Afforded to Red Cells Against Hemolysis by Eosin" They sought to find a correlation between the protection afforded to red cells by certain proteins against lysis by eosin and the nature of the amino-acids in the molecule, and their results indicate that the presence of tyrosin or tryptophan determines ability to protect Experiments were carried out with eosin (Grubler s w g), and red blood cells were used to indicate toxic action, 0 5 c c of a 5 per cent saline suspension of red cells (sheep or ox) was placed in each of a number of small test tubes, and to each, 1 c c of a 1 10 000 eosin in salt solution was added The substances to be tested for protective action were likewise made up in salt solution in specified concentrations and the reaction adjusted to p_H 7 5-8 0 The tubes containing the suspension of red cells, eosin and substance to be tested for inhibitory action and also a number of control tubes were placed in the sunlight for thirty minutes, and after exposure immediately placed in the ice chest The tubes were inspected at the end of three hours and again after eighteen hours to determine the amount of lysis Only in those tubes which after three hours showed that some hemolysis had taken place was a slight increase noted after eighteen hours A certain number of tubes similar to the foregoing were kept in the dark in order to rule out the possibility of any unlooked for factor being concerned in the reaction Protein substances, other than egg-white and blood serum namely, ovomucoid, casein edestin, Witte's peptone and deutero-albumose inhibit the lytic action of eosin on red cells Casein lacks glycocoll, gelatin contains about 16 per cent , apparently the presence or absence of this amino-acid in the protein molecule is immaterial The experiments with pure amino-acids show definite results Of those tested, glycocoll, leucin aspartic acid alpha and beta alanin, glutamic acid cystin, phenylalanin and taurin offer no protection, while tyrosin and tryptophan are very effective Addition of dioxybenzoic and trioxybenzoic acid, resorcin, salicylic acid, pyrogallol or phenol to a mixture of red cells and eosin solution prevents hemolysis on exposure to light

DIAGNOSIS OF WHOOPING COUGH

To the Editor —In THE JOURNAL June 11 p 1720 appeared a review of an article by Meyer on the bacteriology of whooping cough (*Ugeskrift for Læger* **83** 523 [April 21] 1921) I have tried to secure a copy of this magazine in order to secure a full translation of it. If not too much trouble to you may I ask whether there is contained in the original paper information regarding the technic employed by Meyer? If there is information regarding the technic I would appreciate your sending to me a translation regarding the essential facts

F M MEADER M D Detroit

ANSWER—The technic is not described in the article referred to, but in a previous article in the *Ugeskrift for Læger* (**78** 1443, 1916), Meyer described the advantages of having the patient cough directly on a Petri dish containing the potato-blood-agar culture medium advocated by Bordet and Gengou Using potato flour instead of potato extract makes the culture medium easier to prepare. Otherwise Bordet and Gengou's directions are scrupulously followed He does not quote their directions, but emphasizes that it is important to have a "good" sputum, that is, a tough, compact mass as free as possible from saliva and without admixture of vomit The best results are obtained when the subject coughs directly on the culture medium spread in the Petri dish The dish is held 10 cm from the mouth, coughing is induced with a spoon if the subject does not cough spontaneously He reports that this culture by droplet infection, as he calls it, has proved its usefulness in 1,665 specimens sent in to the serum institute for examination The later the stage of the disease, the less frequent the positive findings In the catarrhal stage, positive in 75 per cent , in the first week of the paroxysmal cough, in 57, second week, in 61, third week, in 45, fourth week 40 5, and fifth week and later, only in 9 per cent These findings confirm the wisdom of requiring isolation for five weeks With the culture obtained by coughing directly on the culture medium it thus proved possible to diagnose whooping cough in 75 per cent of the cases during the catarrhal stage The State Serum Institute sends on demand by mail the prepared culture medium in an aluminum Petri dish with a wrapper to return it in He says that few specimens of blood have been sent in for examination, but that the deviation of complement may yield useful corroboratory evidence sometimes, although it is seldom positive before the third or fourth week It is especially instructive when it is a question whether the cough that has been hanging on a long time is of pertussis origin or not This serologic test may prove positive at the third week and even for months or years later A thick emulsion with 2,000 million Bordet-Gengou bacilli gave a positive reaction in all but six to 112 cases, and in only one of 102 healthy controls, and this one woman had had pertussis as a child The test is applied as for the Wassermann reaction Not inactivated serum is better when the disease is in an early phase Meyer's address is Statens Seruminstitut Copenhagen Denmark The regular service for the diagnosis of whooping cough is called the Kighostediagnose station

PERTHES DISEASE OF HIP

To the Editor —Can you tell me something about Perthes' disease of the hip?

S L WEISBROD M D Milford Mich

ANSWER—Perthes' disease of the hip is osteochondritis deformans juvenilis of the hip, also known as Legg's disease The disease is characterized by atrophy and rarefaction of the head of the femur and if weight bearing is continued the head of the femur will be almost destroyed The condition has often been diagnosed as tuberculosis of the hip The cause is unknown Infection, trauma and nutritional disturbances have been considered as etiologic factors There may be pain radiating down the thigh some limitation of motion and atrophy of the hip and buttock. There is no fever The first symptom is a slight limp Unless treatment is instituted shortening of the leg will occur If weight bearing is prevented no shortening occurs, the head of the bone hardens and undergoes repair A plaster-of-Paris spica extending from the foot nearly to the axilla is considered excellent treatment A high shoe on the sound leg and the use of crutches are of importance The *Quarterly Cumulative Index* lists the following most recent articles on the subject

Francisco Juvenile Deforming Osteochondritis *J Kansas M Soc* **20** 60 (March) 1920

Brandes Further Observations on and the Results of Later Examinations in Cases of Osteochondritis Deformans Juvenilis Coxae *Deutsch Ztschr f Chir* **155** 216 1920

Sundt Osteochondritis Deformans of Hip Joint in Young *Zentralbl f Chir* **47** 538 (May 29) 1920

Perthes Osteochondritis Deformans of Hip Joint in Young *Zentralbl f Chir* **47** 542 (May 29) 1920

Waldenstrom Osteochondritis Deformans of Hip Joint in Young *Zentralbl f Chir* **47** 539 (May 29) 1920

Frangenheim Osteoarthritis Deformans Juvenile Coxae Osteochondritis Deformans or coxa Plana? *Zentralbl f Chir* **47** 946 (July 31) 1920

Kreuter Osteochondritis Deformans Juvenile Coxae *Zentralbl f Chir* **47** 1162 (Sept 18) 1920

Grob Perthes Disease *Schweiz med Wchnschr* **50** 493 (June 17) 1920

Francisco Conclusions in Juvenile Deforming Osteochondritis (Perthes Disease) *J Missouri M A* **17** 366 (Sept) 1920

Buckley Case of Osteochondritis Deformans (Legg's Disease or Perthes Disease) *Proc Roy Soc Med* (Clin Sect) **14** 49 (March) 1921

Levy Etiology of Osteochondritis Deformans Coxae *Zentralbl f Chir* **47** 1338 (Oct 30) 1920

Roderick Legg's or Perthes Disease, *Lancet* **1** 210 (Jan 29) 1921

Phemister Operation for Epiphysitis of Head of Femur (Perthes Disease) *Arch Surg* **2** 221 (March) 1921

Fairbank Pseudocoxalgia Osteochondritis Deformans Juvenilis *Lancet* **1** 20 (Jan 1) 1921

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA Juneau, Sept 6 Sec Dr Harry C De Vighne Juneau
MASSACHUSETTS Boston, Sept 13 15 Sec, Dr Walter P Bowers 144 State House Boston
NEW HAMPSHIRE Concord Sept 9 10 Sec, Dr Charles Duncan Concord

Nevada May Examination

Dr Simeon L Lee, secretary, Nevada State Board of Medical Examiners, reports the written examination, held at Carson City, May 2-4, 1921 The examination covered 13 subjects and included 100 questions An average of 75 per cent was required to pass Of the 4 candidates examined, 3 passed and 1 failed Three candidates were licensed by reciprocity The following colleges were represented

College	Year Grad	Per Cent
PASSED		
St Louis College of Physicians and Surgeons	(1892)	85 6
Long Island College Hospital	(1896)	75 7
Aichi Prefecture Special Medical School	(1908)*	81 1
FAILED		
Chicago Hospital Medical College	(1919)	62 2

College	Year Grad	Reciprocity with
LICENSED BY RECIPROCITY		
University of Colorado	(1920)	Colorado
Louisville Medical College	(1904)	Kentucky
Western Pennsylvania Medical College	(1900)	Penna

* Graduation not verified

Book Notices

THE CROONIAN LECTURES ON THE PSYCHOLOGY OF THE SPECIAL SENSES AND THEIR FUNCTIONAL DISORDERS DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS IN JUNE 1920 By Arthur F Hurst M A M D F R C P, Physician and Neurologist to Guy s Hospital Cloth Price $5 Pp 123 with illustrations London Oxford University Press 1920

The investigation of a large number of war neuroses has given the author the opportunity to make observations which throw new light on the psychology of the special senses and the physiology of the reflexes associated with them Hysteria, being the most common neurosis affecting the special senses, is selected for this particular study Accepting the view of Babinski that the stigmas and temporary symptoms of hysteria, as taught by Charcot, are the result of suggestion on the part of the physician, the definition is given that 'hysteria is a condition in which symptoms are present which have resulted from suggestion and are curable by psychotherapy"—apart from actual hysterical symptoms, there are no underlying physical or mental symptoms which precede and accompany them and persist after their disappearance, to which the term hysteria can be applied All classes of hysterical anesthesia, including the classical form recognized in the past, the anesthesia which may follow a condition of stupor—the result of profound inattention during the stuporous period, as also the classes in which anesthesia is primarily organic in origin, due to injury or disease of the brain, spinal cord or peripheral nerves, or due to peripheral anemia —are all produced by heterosuggestion on the part of the physician, even in cases in which the anesthesia is in part a result of autosuggestion Only in rare cases is autosuggestion alone responsible for the production of the anesthesia The explanation of the process by which anesthesia develops when it has been suggested by heterosuggestion, autosuggestion or the two combined is that, in order to feel, one has to pay attention Inattention will result in anesthesia Feeling, seeing and hearing are active processes and require an effort of the will 'Anatomic basis for hysterical anesthesia must exist, which depends on the removal of the structural foundation of the psychologic process of attention" The structural basis of the psychologic act of attention consists in some change which leads to a diminution in the resistance offered at each synopsis of the sensory tract This is in the nature of a throwing out of dendrites, or may depend on some biochemical change in the material which occupies the space between the dendrite terminations of adjacent neurons If this view is accepted, the occurrence of hysterical hyperesthesia can be easily explained It can be extended to explain variations in sensibility to pain, hysterical deafness and hysterical blindness The author's study of the superficial reflexes brings forth the conclusions that cutaneous reflexes are easily affected by slight changes in temperature, fatigue leads to a diminution or loss of the reflex, if the stimulus is applied along the same line, a rapid disappearance of the reflex, when elicited often in the course of examination, is due to the fall of the temperature of the skin caused by exposure rather than to fatigue, absence of inequality of the superficial reflexes may occur in association with hysterical anesthesia, and in the absence of profound anesthesia, absence of the superficial reflexes cannot be regarded as a result of hysteria The importance of emptying the bladder before concluding that the abdominal reflexes are abolished is pointed out The numerous case histories quoted by the author give the technic of the therapeutic measures employed The Croonian lectures of Dr Hurst well deserve careful study

ELEMENTS OF SURGICAL DIAGNOSIS By Sir Alfred Pearce Gould K C V O M S F R C S and Eric Pearce Gould M D M Ch, F R C S Fifth edition Cloth Price $4 Pp 722, with 16 illustrations New York Paul B Hoeber 1920

Crowded between two unimpressive red covers, one finds some 700 pages of material that cover the field of surgical diagnosis in a surprisingly complete way A number of the chapters are worthy of critical analysis The first sixteen are devoted to injuries of the various tissues and organs Such a method of presentation may be a source of confusion to the student since it tends to dissociate his ideas of regional conditions There is no reason for instance, why traumatic peritonitis should be described as a separate entity, distinct from other forms The chapters devoted to injuries of the skull and spine are well written, and are as complete as can be, within the scope of the work They are compact and systematically presented, two features that unfortunately do not always characterize these chapters The remainder of the book is devoted to regional diagnosis, beginning with the lips and face and ending with the foot The chapter on the neck is open to criticism because of the incompleteness of the material on the thyroid The chapter devoted to the breast, however, is excellent The authors are to be commended for their elaboration of the methods of breast palpation and examination—a phase of breast surgery too frequently neglected The chapters on the abdomen are systematic, compact and replete with differential details so valuable to the student There is in this connection a chapter on the chronic dyspepsias, considered from the surgical standpoint, that is well worth while

AN INTRODUCTION TO CHEMICAL PHARMACOLOGY Pharmacodynamics in Relation to Chemistry By Hugh McGuigan Ph D M D Professor of Pharmacology University of Illinois College of Medicine Cloth Price $4 net Pp 418 Philadelphia P Blakiston s Son & Co 1921

It is the author s belief that the period of the pure physiologic method in pharmacology 'in which changes in blood pressure, respiration or heart rate have been recorded for the present seems spent" He is convinced that chemistry offers the most hopeful method for the solution of many pharmacologic problems The aim, therefore, in the compilation of this book has been to select for emphasis those chemical reactions which, in various branches, have an especial relation to pharmacology, presented, of course, from the point of view of the pharmacologist, rather than that of the chemist Such an arrangement should be well received by the student who has just finished his chemistry course, much of the material will be in the nature of a review for him, while enhancing his interest in the avenues leading to clinical application of the "drugs" For instance, Chapter XIII is devoted to anilin and toluene derivatives The chemistry of anilin is discussed tersely, followed by two pages of structural formulas showing the relations of various derivatives A number of qualitative tests are given for the detection of anilin, followed by a short discussion of the chemistry and "pharmacology' of acetanilid, antipyrin, amidopyrin ("pyram-

idon"), saccharin, thymol iodid, phenolphthalein, and phenolsulphonephthalein Other subjects which form chapter heads include ketones, fats and fixed oils, volatile, colloids, or essential oils, glucosids, alkaloids, amins, proteins, colloids, reaction of living matter, salt action and toxicology It is rather anomalous, however, to note that although the subject matter is treated from a chemical point of view, the old German proprietary names are retained instead of the new American scientific names, thus, the proprietary name "veronal" instead of the scientific, nonproprietary name "barbital," "novocain" instead of "procain," and "atophan" instead of "cinchophen" Although McGuigan's contribution cannot be considered a pharmacology in the sense that Sollmann's or Cushny's textbooks are so held, yet it should be a valuable adjunct in stimulating students to keener realization that after all, living matter functions chemically, and rational therapeutics is simply a scientific endeavor somehow to place these reactions in their proper chemical environments—some of which we understand, more of which still require pioneer research

LEHRBUCH DER NERVENKRANKHEITEN FUR STUDIERENDE UND PRAKTISCHE AERZTE IN 30 VORLESUNGEN Von Robert Bing Professor an der Universitat Basel Second edition Paper Price 100 marks Pp 672 with 162 illustrations Berlin Urban & Schwarzenberg 1921

In this edition, Bing's interesting series of lectures dealing with the entire subject of clinical neurology has been brought up to date Some of the lectures have been almost entirely rewritten, others have received considerable amplification The first three chapters, devoted to diseases of the peripheral nerves, are exceptionally complete and eminently practical While the author studiously avoids controversial points, he makes liberal use of his personal war experiences in the presentation of this part of his subject Another chapter, excellently rewritten, is the one on arteriosclerosis of the nerve centers The four lectures on syphilogenous diseases of the central nervous system while by no means complete give the reader a fair idea of the entire field Physicians will appreciate the discussion of the treatment of each disease following the clinical presentation, occasionally enriched by case citations The work as a whole has been well done, and now ranks as a classic Those of us who remember the difficulties attending the study of the old-time textbook which began with etiology and was followed by pathology, symptomatology, clinical descriptions differential diagnosis, and finally treatment, will be pleased with a work written in an easy lecture style

A TEXT BOOK OF PATHOLOGY By Alfred Stengel M D Sc D Professor of Medicine University of Pennsylvania and Herbert Fox M D Director of the Pepper Laboratory of Clinical Medicine University of Pennsylvania. Seventh edition Cloth Price $8 50 net Pp 1111, with 524 illustrations Philadelphia W B Saunders Company 1921

This is the seventh edition in twenty-one years, which shows that there has been a steady demand for a smaller reliable book on pathology In the present edition are many illustrations that no longer seem worth while, e g, the figures that are supposed to make clear the side chain theory and a number of other more or less familiar veterans that served their time In all probability Plate 9, "acute aortitis," is mislabeled Trinominal names are no longer in vogue in bacteriology *Streptococcus intracellulosis meningitidis* certainly is an unexpected designation for the meningococcus Botulism and meat poisoning are not defined clearly Iso-agglutination and the Wassermann reaction do not seem to be mentioned These are minor defects that do not detract seriously from the value of the book. Older sections need simplification and condensation

THE DIAGNOSIS AND TREATMENT OF INTUSSUSCEPTION By Charles P B Clubbe L R C P M R C S Consulting Surgeon to the Royal Prince Alfred Hospital Second edition Cloth Price $2 50 Pp 91 New York Oxford University Press 1921

This treatise—it is scarcely exhaustive enough to be called a monograph—is a practical and up-to-date exposition of the subject Its common sense and insistence on important facts rather than unimportant details must appeal alike to the surgeon, pediatrician and general practitioner The work is based on the treatment of 270 cases, and consequently has the added value of adequate experience

Medicolegal

Injury from "Bon-Opto" Eyewash—Physician as Witness

(Valmas Drug Co v Smoots (U S) 269 Fed R 556)

The United States Circuit Court of Appeals, Sixth Circuit, affirms a judgment against the defendant drug company for injuries alleged to have been suffered by the plaintiff arough the use of an eyewash, called 'Bon-Opto," manufactured and put on the market by the defendant The court says that the preparation was put up in 5-grain tablets The tablets, according to the formula indorsed on the package, contained chloretone, zinc sulphate, sodium chlorid, boric acid, menthe pouvree, and camphre de menthe The quantities were not given but each tablet contained $^{21}/_{125}$ grain of zinc sulphate, which was a trifle more than 3 per cent of the contents of the tablet The evidence on the plaintiff's part tended to show that she, being about 45 years old, on reading a newspaper advertisement "that you could throw away your glasses" if you used "Bon-Opto," bought a bottle at a retail drug store She used eleven of the tablets on as many nights, bathing only the right eye, intending to treat the left one similarly if the right eye was benefited Each use of a tablet caused smarting, which continued about ten or fifteen minutes and then passed off After about a month she consulted a physician in general practice, who found an inflammation of the outer membrane of the eye, which was then so bad as to require bandaging to protect it from the light The physician gave her a prescription which she had filled several times, causing some temporary, but not permanent, relief Thereafter her eyes again troubled her, and her physician advised her to consult a specialist, which she did some months later, with the result that four ulcers were found on the right eye, which the specialist treated for two or three months

The general medical practitioner was permitted to testify, against the defendant's objection, in answer to a hypothetic question that on the assumptions contained therein it was his opinion that the condition of the plaintiff's eye, from which she suffered, including the ulcers thereon, was caused by the use of the zinc sulphate Error was assigned on this ruling, as well as on the refusal to strike out the testimony of the witness generally as to the cause of the plaintiff's suffering and injury—all on the ground that the witness was not competent to testify as an expert But the objection and the motion to strike were properly overruled The witness obtained his medical education at two medical colleges, he had been a practicing physician for twenty-five years, and was then engaged in the general practice of medicine While he had never given particular attention to diseases of the eye, he did undertake to treat such diseases until he concluded, through their failure to respond to his treatment that they should be referred to a specialist The facts that he was not an oculist, had never made a specialty of any particular branch of his profession, and had never used an eyewash containing zinc sulphate, did not, as matter of law make him incompetent to testify as an expert It is not to be presumed that reputable medical colleges fail to give suitable instruction in the fundamental principles of materia medica toxicology and ophthalmology, or that one without either instruction or experience on these subjects would be permitted to engage in general practice in Michigan The weight of his testimony was for the jury

The jury was not bound to accept the testimony of the defendant's president that, before undertaking the manufacture of the tablets he was told by several physicians and specialists that there was nothing about them that would injure any one's eyes, as relieving the defendant of negligence, in view of the evidence on the plaintiff's part as to the effect of zinc sulphate in the quantity used, and having in mind the newspaper advertisement testified to by the plaintiff as well as the representations on the package that the remedy was not only "nonirritating and harmless," but that it was for use as "a home remedy"—implying that it was safe in all cases and without occasion to resort to physicians'

advice or prescription The jury might well have concluded that, although it was customary to use as much or more zinc sulphate in an eyewash, it was negligent to offer it to the public, not only without caution, but with the sweeping (and, at least in one case, extravagant) claims said to have been made for it In the court's opinion there was substantial proof of the defendant's negligence requiring the submission of the case to the jury

Salpingitis a Disease Common to Both Sexes

(National Life & Accident Ins Co v Weaver (Texas) 226) S W R 754)

The Court of Civil Appeals of Texas, in affirming a judgment in favor of the plaintiff, Mrs Weaver, on a policy of accident insurance, says that the question was presented as to whether the disease salpingitis, with which the defendant claimed that the plaintiff was suffering, was one common to the two sexes, within the meaning of the policy, which insured her against bodily injury, or disease or illness common to both sexes The court concludes that the question should be answered in the affirmative There was expert testimony in the case that salpingitis is an inflamed condition of the parts affected It may be an inflamed condition of the ovarian tubes, the fallopian tubes, or other parts of the body of a woman and of such parts of a man's body subject to such condition possessed by him, as the eustachian tubes The fact that a disease at times shows itself in an organ possessed by women and not by men does not make it a disease peculiar to women, for it could not be peculiar to women unless men were immune from its ravages The court thinks the correct interpretation of the provision, which in effect exempted the defendant from liability for sickness caused by diseases not common to both sexes, covered only such sicknesses or diseases women have and from which men are immune

A Good Indictment—Medical Law Not Discriminatory

(Hicks v State (Texas) 227 S W R 302)

The Court of Criminal Appeals of Texas, in affirming a judgment of conviction of defendant Hicks, a chiropractor, of unlawfully engaging in the practice of medicine, holds the indictment sufficient, although the defendant contended that it was not because it did not, in addition to the allegation of failure to file the required certificate, state that he did not register his age postoffice address, place of birth, or school of practice to which he professed to belong, with the district clerk of the county The court says that one wishing to practice medicine in the state of Texas must file with his district clerk a certificate In addition, he must also file a document stating his age, postoffice address, place of birth, and school of practice The latter document he must sign and swear to himself He may be prosecuted as an illegal practitioner of medicine for failure to file either instrument, according to the facts, but it would not be necessary on prosecution for failure to file only one of them for the indictment to allege the failure to file the other

A second ground urged for quashing the indictment was that Article 5741 of the civil code of the state and Article 5742 thereof conflicted with each other, in that the former prescribed certain subjects on which every applicant for license to practice medicine must stand an examination, while the latter specifically provided that nothing in this law—referring to the medical examination—should discriminate against any school or system of medical practice But the court is unable to find anything in either of those articles which conflicts with the other

Moreover, the court is unable to find anything discriminatory in Article 5741 The court has no means of judicially knowing that the subjects named by the statutes on which examination must be had by one desirous of practicing medicine are those pertaining only to allopathic practice Matters going to sustain such proposition would be matters of fact and not of law, and not facts of such a general knowledge as to enable this court to take judicial recognizance thereof

The practice of medicine affects the lives and well-being of all our citizens, and in all its phases as a public business is well within the legitimate police powers of the state It is not to be supposed that the legislature would arbitrarily fix unreasonable limitations on so vital a matter as the general requirements for examination, applicable alike to all who desire to engage in the high calling of the practice of medicine The court has no right to assume judicially as to the facts which were before the legislature when it passed the law in question, whether it was urged by allopaths, homeopaths, osteopaths, optometrists, chiropractors, chiropodists or ophthalmologists The law as a law appears to be made equally for all who fairly come within its comprehension, and, as far as the court knows, prescribes no examination conforming to the technical requirements of any school or branch of medical practice, and is not violative of the tenets of the state constitution, which commands laws prescribing the qualifications of physicians, and forbids preference by law to any school of medicine

Decision of Medical Examiners Not to Be Disturbed

(State Board of Medical Examiners v Boulls (Colo) 195 Pac R 325)

The Supreme Court of Colorado says that this cause was before it to review a judgment entered on a writ of certiorari to the state board of medical examiners, which judgment, of the district court, reversed the action of the board in refusing to the defendant in error a license "to practice chiropractic" For the board it was urged that the trial court and this court were both without jurisdiction to consider the merits of the case, this for the reason that the only question to be determined on a writ of certiorari is whether the inferior tribunal or board has exceeded its jurisdiction or greatly abused the discretion allowed it This contention is sustained by repeated rulings of this court The statute under which the defendant in error applied for a license made the state board of medical examiners a tribunal to determine whether or not he came within the provisions of the law The defendant in error was allowed a hearing on the matters involved, and the determination of the question presented to the board was within its jurisdiction Its decision was therefore not to be disturbed on writ of certiorari The judgment of the district court was accordingly reversed, and the cause remanded, with instructions for further proceedings in harmony with the views herein expressed

Fantastic Beliefs and Testamentary Capacity

(In re Olson's Estate (Minn) 180 N W R 1009)

The Supreme Court of Minnesota, in affirming a judgment upholding a will, holds that, so long as the understanding and reason are so far unclouded that a testator has sufficient intelligence to be able to transact ordinary business, a court is not bound to conclude that he did not have sufficient capacity to make a will because he was the victim of delusions Fantastic beliefs are not so uncommon as to indicate a mind incapable of collecting and comprehending the facts a person should consider in making a will The existence of a delusion with respect to a particular subject or subjects is not conclusive evidence of mental incapacity The delusion may have no basis whatever and no evidence may suffice to dispel it, but if it did not influence the testator with respect to the terms of his will its existence does not invalidate the will This is the settled doctrine in England, and is the doctrine of practically all the American cases

Society Proceedings

COMING MEETINGS

Amer Assn of Obst. Gynec and Abdom Surgs St Louis, Sept 20 22
American Electro Therapeutic Association Washington D C Sept 7 10
American Roentgen Ray Society Washington D C Sept 27 30
Colorado State Medical Society Pueblo Sept 6 8
Delaware State Medical Society Rehoboth Aug 16
Indiana State Medical Association Indianapolis Sept. 28 30
Kentucky State Medical Association Louisville Sept. 27 29
Minnesota State Medical Association Duluth Aug 24 26
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Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Obstetrics and Gynecology, St Louis

July 1921, 2, No 1

*Induction Complicated by Hemorrhage, of Labor E P Davis Philadelphia—p 1
*Chemical Studies in Normal and Abnormal Pregnancies I Significant Chemical Changes in Blood in Toxemia of Pregnancy J A Killian and C P Sherwin New York—p 6
*Blood Chemistry in Normal and Abnormal Pregnancy W E Caldwell and W G Lyle New York—p 17
Study of Ossification Centers of Wrist Knee and Ankle at Birth with Particular Reference to Physical Development and Maturity of New Born F L Adair and R E Scammon Minneapolis—p 35
*Administration of Pituitary Extract at Beginning of Third Stage of Labor G H Ryder New York—p 61
Least Common Multiple in Obstetrics H M Little Montreal—p 67
*Experimental Studies Following Oophorectomy H Bailey New York—p 77

Hemorrhage in Induction of Labor—Four cases are recorded by Davis He suggests that the use of a new sterile rectal tube which does not pass beyond the lower uterine segment is safer than the use of bougies It is not as prompt in its action, nor does it soften the cervix so thoroughly as the use of bougies From his experience, Davis is not inclined to believe that the use of bougies does cause serious hemorrhage On the whole in his experience, this method has been the most uniformly successful of any employed for the induction of labor It has produced the result of more closely resembling spontaneous parturition than any other

Chemical Studies in Pregnancy—Low values for nonprotein and urea nitrogen were found by Killian and Sherwin in normal pregnancy The urea nitrogen constitutes about 44 per cent of the nonprotein nitrogen No variation is found in the uric acid, creatinin, chlorid or sugar concentration of the blood of normal pregnant women from that observed in nonpregnant women A slight decrease in the carbon dioxid combining power of the blood plasma characterizes the last months of normal pregnancy The chemical changes in the blood in the nephritic toxemias are typical of impairment of kidney function in general There is an increase in nonprotein and urea nitrogen, and more than 50 per cent of the nonprotein nitrogen is in the form of urea nitrogen Some of the clinical symptoms, also point to a more or less severe nephritis At most but a slight improvement follows the emptying of the uterus Analogous chemical changes are found in the blood in pernicious vomiting, postpartum eclampsia, and eclampsia with gravid uterus The nonprotein nitrogen is markedly increased, whereas the urea nitrogen is at the low normal limit or decreased, constituting 15 to 38 per cent of the nonprotein nitrogen A definite increase in uric acid is found, which is due to an impairment of renal function In some cases the disturbance of the kidney function resulted in a retention of urea nitrogen in addition to the uric acid In this type of toxemia the involvement of renal function results from the toxemia A moderate or severe acidosis is observed in all cases A prompt improvement, judged from a clinical standpoint and from the chemical composition of the blood in most instances follows the emptying of the uterus

Blood Chemistry in Pregnancy—In normal pregnancy, as compared with the nonpregnant state, Caldwell and Lyle found a low total of nonprotein nitrogen, low urea nitrogen and a very low ratio of urea nitrogen to the total nonprotein nitrogen The excretory nitrogenous constituents in the maternal and the fetal circulations at the end of labor are practically identical A definite retention of uric acid in the blood at the end of labor is found only in abnormal cases The blood pictures in eclampsia and toxemia of pregnancy are interpreted most readily in terms of kidney insufficiency The significance of a given blood picture can be defined only in the light of the clinical conditions at the exact time when the blood was taken Marked kidney insufficiency, indicated by high retention of nitrogenous waste products, warrants a very grave prognosis High creatinin retention seems to warrant a serious prognosis When the nitrogenous constituents do not return to normal early in convalescence, a doubtful prognosis for subsequent pregnancies is justified A rapid return of the blood picture to normal justifies a favorable prognosis for subsequent pregnancies

Use of Pituitary Extract in Third Stage of Labor—One c.c. of pituitary extract was administered by Ryder at the beginning of the third stage in 100 cases of labor and 100 other labors were observed in which pituitary extract was not given at the beginning of the third stage of labor It would seem from the data given that this is a safe procedure In none of the 100 cases was there any bad effect apparent It tends to cause spontaneous expulsion of the placenta and to lessen the amount of blood lost It makes guarding of the fundus during the third stage easier Little stimulation of the fundus is necessary to keep it contracted It does not do away with the necessity of watching or holding the fundus It is not sufficient that the fundus remains well contracted It must be kept from riding high, otherwise unobserved bleeding may occur into the membranes already partly expelled into the vagina It is probably better not to wait twenty minutes as a routine before trying to express the placenta, as was done in this series The attempt can often be made earlier with advantage, but should not be persisted in if expression is at all difficult On the whole, the method is worthy of further study and consideration

Experimental Studies Following Oophorectomy—Metabolism studies after oophorectomy tend to show a reduction both of the oxygen consumed and the carbon dioxid eliminated The greatest reduction occurs at a time some two or three months after the operation and when atrophic changes have probably occurred in the uterus The experimental work therefore, Bailey maintains, must be considered as inconclusive as regards the demonstration of a direct effect on the energy metabolism of the cell by an ovarian secretion Experiments conducted with a view of ascertaining the condition of the ovary after hysterectomy show that in young animals the ovarian development goes on in a normal manner Work with adult animals would indicate that following hysterectomy no ovarian change may be demonstrated until after a three or four month period Clinical gynecology offers proof that the menopause ensues notwithstanding that the ovaries remain, if the uterus is entirely removed, and that saving a portion of the uterine mucous membrane so that menstruation may occur, prevents these symptoms Transplantation of the ovary is of no value in relieving menopausal symptoms, unless the uterus or part of it remains

Archives of Internal Medicine, Chicago

July 15 1921 28, No 1

*Renal Irritation in Man from High Protein Diet T L Squier and L H Newburgh Ann Arbor Mich—p 1
*Effect of Cyanids and of Organic Oxidizing Agents on Liver Injury Caused by Chloroform N C Davis San Francisco—p 20
*Etiology of Outbreak of Infectious Diarrhea H Weiss Boston—p 37
*Intravenous Use of Foreign Protein in Treatment of Chronic Cases of Arthritis R G Snyder and M A Ramirez New York—p 50
*Renal Glycosuria P L. Marsh Ann Arbor Mich—p 54
*Right Ventricle in Pulmonary Tuberculosis E P Boas and H Mann New York—p 62
Frequent Causes and Treatment of Seasonal Hay Fever I C. Walker Boston—p 71
Some Urinary Changes in Normal Individuals on Pellagra Producing Experimental Diet M J Sullivan Spartanburg S C—p 119

Renal Irritation from High Protein Diet.—Evidence is presented by Squier and Newburgh to show that high protein diet in man is a renal irritant Forced high protein feeding in the presence of kidney damage resulted in the appearance of red blood corpuscles in the urine, and in the appearance of albuminuria or in an increase of a preexistent albuminuria Forced high protein feeding invariably resulted in the appearance of red blood corpuscles in the urine of normal men In some of the cases receiving high protein diet there was a definite increase in the edema and macular changes of the fundus following the meat High protein diet over a short period had no effect on the blood pressure

Effect of Cyanids on Chloroform Liver Injury—These experiments reported by Davis offer no evidence that chloroform liver injury is a result of disturbance in tissue oxidations

Outbreak of Infectious Diarrhea—Of eight cases in which urine, feces and blood were examined by Weiss, seven yielded a gram-positive micrococcus from one or more sources, which were biologically identical in their reactions on fermentation mediums The organisms were agglutinated by the serum of patients from which they were obtained, and also by the serum of other patients Three strains that did not agglutinate when first isolated were subsequently agglutinated by rabbit serum produced with a heterologous strain Rabbits are resistant to infection by this organism Old and young rabbits were used, but the results were uniformly negative Macacus rhesus monkeys were fed with mixed strains One monkey died on the fourteenth day after a profuse diarrhea on the thirteenth day from which the organism was isolated It was subsequently isolated at necropsy from the mesenteric lymph nodes and the spleen A second monkey fed with cultures, filtered free from the broth in which they had been grown, developed a diarrhea on the fifth day and recovered A third monkey was fed with mixed broth cultures by means of a stomach tube He died on the eighth day A pathologic condition was found at the juncture of the large and small intestine and the organism was found in the mesenteric lymph nodes and spleen Two monkeys, one fed with the sterile filtrate from broth cultures and the other with cultures killed by heating at 60 C for twenty minutes developed no symptoms and remained alive One monkey actively immunized by a polyvalent vaccine made from these cultures was subsequently resistant to infection One monkey that Weiss attemptd to immunize passively by injection with specific rabbit serum died fifteen days after feeding, and the organism was isolated at necropsy from the spleen and mesenteric lymph nodes The experiments indicate that the organism is pathogenic for Macacus rhesus monkeys, produces no exotoxin or endotoxin and can be used to produce active immunity against subsequent infection The sum of evidence presented in this paper suggests the etiologic relationship of the organism described to infectious diarrhea in the outbreak studied

Intravenous Use of Foreign Protein in Chronic Arthritis—The majority of the patients in the series analyzed by Snyder and Ramirez have at one time or another during the past three years had both typhoid vaccine and secondary proteose administered intravenously They have experienced less nausea, headache and weakness following the use of secondary proteose than after the injection of typhoid vaccine Over a long series of injections they seem to lose less weight with the use of secondary proteose than with the typhoid vaccine On the whole, the proteose appears to be less toxic, and it is of significance that patients who have been treated with typhoid and proteose strongly prefer the proteose for subsequent injections In relieving the pain and in improving the motion in the joints, equally good results seemed to follow the use of proteose and typhoid vaccine Cases of chronic arthritis which have not been relieved by the routine treatment consisting of sodium salicylate, acetylsalicylic acid, colchicin, cincophen, hot packs baking or massage are as a rule, materially benefited by the intravenous administration of small doses of foreign protein The degree of benefit to be obtained varies with the individual case, and is nearly always greatest in the joints of the upper extremities

Renal Glycosuria—A case of renal glycosuria is described by March During a period of four months the patient excreted an average of 60 gm glucose daily with a variation of from 15 to 122 gm The amount was not related to the carbohydrate intake After the ingestion of 100 gm glucose, the blood sugar rose from a fasting per cent. of 0 071 to 0 092 in thirty minutes, by the end of two hours it had fallen to 0 043 per cent, and after five hours it was found to be 0 068 per cent Even with a blood sugar as low as 0 043 per cent, glucose was excreted at the rate of over 5 grams per hour Diuresis by increased water ingestion caused no increase in the glycosuria, and no effect was seen from the administration of diuretin in large doses No evidence of nephritis was found The D N ratio in the urine of starvation was about 10 1 She reacted to a laparotomy for acute intestinal obstruction in a perfectly normal manner

Right Ventricle in Pulmonary Tuberculosis—An electrocardiographic study made by Boas and Mann of ninety-seven patients with pulmonary tuberculosis revealed 29 per cent with right ventricular predominance 30 per cent with left ventricular predominance, and 41 per cent with no predominance of either chamber Right ventricular predominance is not always associated with any particular type of tuberculosis It is found more commonly in young than in old patients, and twice as frequently in men as in women Left ventricular predominance is not always associated with any particular type of tuberculosis It is found more commonly in older patients, and is twice as frequent in women as in men Left ventricular predominance occurs more frequently with the increasing age of the patient In contrast to the necropsy findings reported in the literature, right ventricular predominance is not found more frequently in association with fibroid phthisis, or with pleural adhesions, than with other types of pulmonary tuberculosis

Boston Medical and Surgical Journal

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*Etiologic Factors in Traumatic Myositis Ossificans C F Painter Boston Boston—p 45
Complications Following Cholecystectomy I J Walker Boston—p 52
*Case of Extensive Cavernous Angioma of Head Face and Neck with Attacks of Fever and Somnolence G Blumer New Haven Conn—p 58
Paresis Treatment by Arsphenamin and Mercury C A Bonner Worcester Mass—p 60
Roentgen Ray in Diagnosis of Chronic Appendicitis and Chronic Cholecystitis F H Lahey Boston—p 61
Neurotomy (Stoffel Operation) in Case of Spastic Paraplegia Following Spinal Fracture R N Hatt Boston—p 62
Marked Sclerosis of Abdominal Aorta C R Scott New Haven Conn—p 63
Use of Sodium Bromid Solution in Pyelography and Its Toxicity in Comparison with Other Mediums E L Merrit Fall River Mass—p 65

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Public Health Activities of William T Sedgwick. E. R Kelley Boston—p 71
Public Health Work of Professor Sedgwick G C. Whipple Boston—p 74
Professor William T Sedgwick A L Lowell Cambridge—p 78
Prolapse of Prostate Gland G M Garland Boston—p 78
Questionnaire on Sacro Iliac Joint Lesions H W Marshall Boston—p 79
Report on Dermatology Situation of Lupus Vulgaris J T Bowen Boston—p 88

Traumatic Myositis Ossificans—Painter says that there is some ground for feeling that in the isolated cases where single traumas seemingly act to incite an ossification in muscle these may be individuals, who, having escaped the progressive form of the disease, still have just enough of a tendency toward that type of katabolic transformation to react to the stimulus of a violent trauma That there is an intermediary class of persons who have never had the progressive type and who, through suffering, as all of us may, from traumas of equal severity to those causing a traumatic myositic development in many individuals, have also escaped from any of these lesions, but who under slight oft repeated traumas, have developed transformations in tendon sheaths and the fascial attachments of certain muscles, e g the tendo Achilles and the abductor longus is again suggestive that in all three classes it may be a matter of a diathesis or dyscrasia, in varying degree, that underlies them all In one no trauma is required to set into operation the retrograde metamorphosis, in another, it needs to be slight but oft repeated, and in the third, the trauma must amount to violence There may be no very sound logic to this view, but certainly the theories of periosteal transplantation or osteoplastic migration are not sufficient to explain all the cases If this diathetic theory will not cover all, then there must be two classes in one of which there is one etiology and another in the other This does not seem reasonable when the objective evidences of the condition are all so closely allied

Extensive Cavernous Angioma—Blumer related the case of a man, aged 49, whose family and past history was uneventful A nevus of the forehead just external to the outer angle of the right eye, was noted at his birth It had steadily increased in size About the age of 30, three groups of symptoms had appeared, which are probably related to

one another For the last fifteen to eighteen years, the patient has had attacks of headache These occur once or twice a month, are very intense, bilateral, occipital in distribution, and unaccompanied by nausea Going without food tends to bring them on Food relieves him somewhat, but he has an intense occipital headache and feels slightly drowsy He lies down and goes sound asleep, often to awake in a few hours feeling quite well During the last five to eight years, the patient has had attacks of drowsiness not associated with headache He has difficulty in concentrating his attention, is slightly garrulous, and at times feverish He feels light headed and his gait becomes definitely unsteady There is no true vertigo or tendency to fall in any particular direction With these attacks there are no ocular or auditory manifestations There may be slight prickling in both hands or wrists or a pain in the elbow There is no speech disturbance, and memory is not affected During the last few months, the patient's fellow workers have noted three sudden attacks of complete unconsciousness, coming on suddenly and lasting fifteen or twenty minutes Physical examination shows on both sides of the neck anteriorly, more markedly on the right side, a deep cavernous plexus of veins which collapses easily These vessels are about 12 or 14 mm in diameter In several of them, hard rounded bodies, nonsensitive and as much as 1 cm in diameter, can be felt On the right side, the angiomatous mass becomes very superficial in the region just behind the outer angle of the eye, where it forms a bluish mass which, in its distended condition is five to six centimeters in diameter In the region of this mass, the superior orbital ridge is defective and the outer tables of the skull appear to be absent The angiomatous process involves not only both sides of the neck and the right temporal region, but also the ocular conjunctiva on the right side, the cheeks, the hard and soft palate, the right half of the tongue and the pharyngeal walls as far down as can be seen There is no bruit over the skull in the region of the mass The general physical examination of the internal viscera is negative except for slight enlargement of the heart The neurologic examination is almost negative Lumbar puncture produced a clear fluid under increased pressure There were fifteen cells to the cubic millimeter The Pandy and Ross-Jones reactions were positive. The Wassermann and colloidal gold reactions were negative A roentgenogram of the skull showed general thickening of the tables with the vascular depressions somewhat more marked than normal The sella turcica was clearly defined There was absence of the left frontal sinus There was destruction of bone in the right supraorbital region There were numerous circular areas of increased density in the zone occupied by the angioma While not quite typical, the history of this case, Blumer says, recalls in many ways, recorded cases of so-called cirsoid aneurysms or angiomas of the pia He concludes that this is an instance of the association of an external agioma of the cranium and face, with an independent internal agioma involving the pia mater

Journal of Infectious Diseases, Chicago

August 1921 **29**, No 2

*Initial Exanthem of Smallpox M Tsurumi and S Isono Dairen, Manchuria —p 109
Bacillus Botulinus (Type A) Associated with Fatal Pasture Disease of Horses R Graham and H R Schwarze Urbana Ill —p 114
Purity of American Strains of Bacillus Botulinus G F Reddish New Haven Conn —p 120
*Immunologic Study of Bacillus Influenzae A M Chesney St Louis —p 132
Effects of Hemolytic Streptococci on Blood and Hemopoietic Organs of Rabbits M S Tongs Chicago —p 141
Reactions of Nasal Cavity and Postnasal Space to Chilling of Body Surface II Concurrent Study of Bacteriology of Nose and Throat A Goldman S Mudd and S B Grant St Louis and Boston —p 151
Antibodies for Sheep Blood and Complement of Aqueous Humor in Normal and Immunized Rabbits R Kodama Chicago —p 160
Food Accessory Factors in Bacterial Growth III Growth of Pfeiffer's Bacillus (B Influenzae) D J Davis Chicago —p 171
Accessory Factors in Bacterial Growth IV Satellite or Symphiosis Phenomenon of Pfeiffer's Bacillus (B Influenzae) D J Davis Chicago —p 178
*Changes in Human Central Nervous System in Botulism C B Semerak Chicago —p 190
*Anaphylaxis Reaction with Purified Proteins from Milk H G Wells, Chicago and T B Osborne New Haven Conn —p 200

Initial Exanthem in Smallpox—Prior to the peculiar eruption of smallpox is the so-called initial exanthem This eruption bears a close resemblance to the eruptions of scarlet fever and measles, and is of significance in the diagnosis of smallpox, especially in cases of so-called variola sine exanthemate, when it may be the only symptom on which to base an intelligent diagnosis Of 103 patients with smallpox treated at the Dairen Isolation Hospital, thirty-nine had an initial exanthem Close observation seems to warrant the classification of the initial exanthem in smallpox into the hemorrhagic, the scarlet-fever-like, and the measles-like The eruption appeared on the outer side of the upper arm in all the cases in this series There is no direct relation between the initial exanthem and the pock marks In the vaccinated the eruption is most marked about the place of vaccination However, if ten years have elapsed since the last vaccination, no such tendency is apparent An initial exanthem does not necessarily guarantee a light attack This is true especially if the exanthem is hemorrhagic

Immunologic Study of Influenza Bacillus—Twelve strains of hemoglobinophilic bacilli obtained from eleven patients with influenza during the recurrent epidemic of 1920 have been studied immunologically by Chesney Cross-agglutination tests and absorption experiments indicate that of the twelve strains four, or 33 per cent were identical in their immunologic reactions No evidence of relationship to strains obtained from another source was encountered These results lend no support to the view that the influenza bacillus of Pfeiffer is the cause of epidemic influenza

Changes in Central Nervous System in Botulism.—Semerak's report deals with the study of a brain-stem examined in serial sections from a case of botulism in a girl, 17 years old The changes are confined to the vascular system Thrombosis in arteries and veins is the initial change followed by ischemic necrosis and later by inflammation The poison has no direct action on the nerve cells, the retrogressive changes are secondary and due to the disturbed blood supply The ganglion cells of origin of the motor cranial nerves are always involved because their blood supply is derived from terminals of branches of the vertebral arteries which seem to be the seat of predilection of the thrombosis

Anaphylaxis From Milk Proteins—Cow's milk contains four chemically distinct proteins or protein fractions, namely, casein, lactalbumin, lactoglobulin and an alcohol-soluble protein By means of the anaphylaxis test it can be shown that these four proteins are immunologically distinct This fact furnishes another striking illustration of the dependence of immunologic specificity on chemical composition rather than biologic origin Of these four proteins only one, the globulin, sensitizes to beef serum or causes reactions in animals sensitized to beef serum This corresponds to the observation of Crowther and Raistrick that lactoglobulin and serum globulin are chemically indistinguishable That some positive cross sensitizations may be occasionally obtained between cow's milk and beef serum is explained by the fact that the globulin constitutes a very small part of the milk proteins Several other protein fractions obtained by Wells and Osborne in studying milk proteins were, according to anaphylaxis tests, not distinct from the four known proteins of milk Their experience with milk proteins, as well as with proteins of other sources, has demonstrated that immunologic methods are a great aid and in many cases indispensable in preparing proteins in a state of purity, and may be used to furnish information concerning chemical relations of proteins from different sources

Journal of Nervous and Mental Diseases, New York

May 1921 **53**, No 5

*Changes Produced in Nerve Cells of the Spinal Cord Following Exposure to Cold C DeFano London —p 353
Blocking the Splanchnic Nerves. G A Preiss and Al Ritter Zurich —p 361
*Blood Analysis in Catatonic Dementia Praecox S Uyematsu Hathorne Mass and T Soda, Tokyo, Japan —p 367

Effect of Cold on Spinal Nerve Cells—DaFano claims that relatively protracted exposure of small animals to a moderate degree of cold is sufficient to cause peculiar changes in the

nerve cells of the dorsal horns, anterolateral and middle cell columns and the grey matter surrounding the central canal

Blood in Dementia Praecox Catatonia—There is a definite and absolute blood formula for the catatonic dementia praecox group In 75 per cent of the cases studied there was a decrease of uric acid In 47 per cent there was an increase in the amount of blood sugar The average deviation of each constituent of the blood is higher than that of the normal, suggesting an unstable metabolic activity

Medical Record, New York

July 16 1921 **100** No 3

Surgery Among Uncivilized Races J R Pennington Chicago—p 89
*Mediastinal Sarcoma Report of Three Cases R Duncan Los Angeles—p 96
Chronic Nontuberculous Lung Disease H Greeley Brooklyn—p 99
Roentgenographic Technic with Bucky Diaphragm W H Dieffenbach A J B Savage and L Fox New York—p 101
Deleterious Effects of Bromid Treatment in Diseases of Nervous System E L Hunt New York—p 103
Unusual Obstetric and Gynecologic Cases L F Herz, New York.—p 105
*Unusual Case of Malignancy E M Ellison Washington, D C—p 106

July 23 1921 **100**, No 4

Encephalitis Completa J V Haberman New York—p 135
Narcotic Situation E H Williams Los Angeles—p 140
Health Problem F E Jackson Indianapolis—p 143
Chlorosis a Toxemia Not a Primary Anemia S R Salzman Toledo p 149
Mountain Sickness D W Montgomery San Francisco—p 152
New Pharyngeal Tube for Anesthesia in Oral and Head Surgery R C Coburn New York.—p 155
Suprapubic Cystotomy Ring E G Ballenger and O F Elder Atlanta, Ga—p 156

Three Cases of Mediastinal Sarcoma—Duncan reports three cases of mediastinal sarcoma treated with radium Two cases of primary sarcoma of the mediastinum in which involvement of the adjacent organs probably had not occurred, responded promptly to treatment and warrant a very favorable prognosis The third case is an example of metastatic mediastinal involvement showing the palliative and probable curative effect of radium therapy in these cases Duncan believes that there is reason to hope for a permanent improvement in some of these cases

Unusual Case of Malignancy—In 1898, Elliston's patient, then aged 38, discovered what her family physician called a wen located between the nipple and the upper margin of the right breast, which he advised her to let alone and forget This mass was and remained for a long while about the size of a hen's egg, was superficial and readily movable It gave no subjective symptoms whatever until 1905, when it suddenly became somewhat larger and painful A simple amputation of the right breast was performed Fourteen years after this amputation, she noticed that her left breast had become rather hard and painful in and close about the nipple Ellison's tentative diagnosis was acute mastitis, for which simple local treatment was prescribed As the same signs and symptoms were present at the end of another week, a radical amputation of the left breast was performed The microscopic diagnosis was metastatic carcinoma in lymph glands, fat and muscle tissue Four radium treatments were given in about eight weeks In the meantime, the left chest and arm had gradually become quite hard, swollen and painful It was readily observed that her condition was constantly growing worse and that the radium had signally failed to prevent recurrence or extension The patient died in 1920

New York State Journal of Medicine, New York

July 1921 **21**, No 7

Importance of History Taking in Chronic Gastro Intestinal Disease W Goldie Toronto—p 239
Interpretation of Gastro Intestinal Signs and Symptoms F W Rolph Toronto—p 242
Pneumoperitoneal Roentgen Ray Diagnosis A Stein and W H Stewart New York—p 245
Urologic Diagnosis in Practice of General Surgeon L Buerger, New York—p 248
*Deleterious Effects of Bromid Treatment in Diseases of Nervous System E L Hunt New York—p 255
Corneal Lesions A J Bedell Albany—p 258
*Intestinal Tuberculosis. L Brown and H L Sampson Saranac Lake—p 260
Some Special Educational Needs for Children S Brown New York—p 261
Spinal Puncture in Diagnosis and Treatment W E Youland New York—p 265
Vitamins and Nutrition M J Lewi and H E Dubin New York—p 268

Bad Effects of Bromid Treatment for Nervous Diseases—Hunt points out that there are certain types of epilepsy in which the use of bromid aggravates both the irritability and restlessness preceding the seizure as well as the depression following The toxic and exhaustion cases react unfavorably to the administration of bromid Mental cases are susceptible to bromid intoxication Patients suffering from arterial changes are peculiarly susceptible to bromid as they are all kindred drugs Alcoholics are susceptible to bromid intoxication Certain persons display an idiosyncrasy to bromid In a few cases of chronic heart disease not only do small doses of bromid depress and enfeeble the heart action, but if long continued, give rise to the paretic symptoms so common in this condition Therefore, bromids are very far from harmless Their prolonged administration will give rise to both physical and mental symptoms, the latter a condition akin to paresis They tend to aggravate the irritability and mental deterioration in long-standing cases of epilepsy Toxic cases develop more rapidly on the administration of bromid Bromid may mask the symptoms of mental disease just as thoroughly as does opium in surgical conditions

Intestinal Tuberculosis—In 1920 19,612 persons died in New York State from tuberculosis, of these 7,235 died from pulmonary tuberculosis The most frequent complication of pulmonary tuberculosis is intestinal tuberculosis It is found in from 50 to 80 per cent or more of all necropsies done on patients dead of pulmonary tuberculosis Then 10 351 of the 17,235 patients had intestinal tuberculosis at death, of whom only 453, or 1 in 25 were diagnosed Six per cent of 89 consecutive cases at the Trudeau Sanatorium had definite or probable intestinal tuberculosis, but one-half of these were without intestinal symptoms Tubercle bacilli in the stools are of little diagnostic aid as they occur in 85 per cent to 95 per cent of all patients with tubercle bacilli in the sputum

Ohio State Medical Journal, Columbus

July 1 1921 **17**, No 7

Surgical Neuralgia of Fifth Cranial Nerve L H Landon Pittsburgh—p 452
Restoration of Obliterated Eye Socket J M Wheeler New York.—p 456
Importance of Goiter Being Recognized by General Public W Bartlett St Louis—p 461
Treatment of Addiction Disease F Burns Cincinnati—p 464
Version I W Potter Buffalo—p 466
Acute Methyl Alcohol Poisoning R Isaacs Cincinnati—p 471

Philippine Islands Medical Association Journal, Manila

March April 1921 **1**, No 2

The Greater Association H W Wade—p 46
*Comparative Study of Several Contributing Factors to Postoperative Fistulas in Vesical Lithiasis J Eduque—p 48
Differential Diagnosis of Dysenteries F G Haughwout—p 53
Cases of Nontraumatic Myelitis and Their Probable Etiology C B Lara—p 58
Preparation of Certain Drugs Used in Treatment of Leprosy G A Perkins—p 62
Right Diaphragmatic Hernia. R Fernandez.—p 67

Postoperative Fistulas in Vesical Lithiasis—As the main contributing factors to postoperative fistulas in cystolithotomy Eduque mentions (1) operation before the infection within the bladder cavity subsides, (2) intravesical drainage has been observed many times to be followed by leakage of long standing and infection at the prevesical space if postoperative care is not properly carried out, (3) continuous contact of the bladder wound with the urine that accumulates within the cavity (4) insufficiency and irregularity of intravesical flushing after operation (5) lack of regular change of the catheter per urethram, (6) in some cases, long standing postoperative blood clot may plug the vesical end of the urethral catheter and lead to obstruction of the bladder thus mechanically bursting the stitches (7) infection at the space of Retzius may go deeper through the coats of the bladder, and lead to fistula, (8) hence the necessity of

the drain at the prevesical cavum, loose union between the abdominal wall and vesical wall might delay solid coaptation of the bladder wound, and fistula is likely to occur

Philippine Journal of Science, Manila

February 1921 **18**, No 2

Physical Properties of Philippine Concrete and Concrete Aggregates A E W King—p 105

So Carolina Medical Association Journal, Greenville

June 1921 **17**, No 6

Diagnosis of Primary Anemias from Viewpoint of General Practitioner E. W Pressley, Greenville—p 135

Nursing Spirit. F Lander Williamston—p 138

FOREIGN

Titles marked with an asterisk (*) are abstracted below Single case reports and trials of new drugs are usually omitted

British Journal of Children's Diseases, London

April June, 1921 **18**, Nos 208 210

Diagnosis and Treatment of Congenital Syphilis C F Marshall—p 57

*Diurnal Somnolence and Nocturnal Wakefulness as Manifestations of Lethargic Encephalitis H M Fletcher—p 69

*Fatal Case of Emaciation in Girl at About Period of Puberty F P Weber—p 75

Treatment of Prolapse of Rectum in Infancy and Childhood by Injection of Alcohol L Findlay—p 83

*Case of Diphtheria of Penis with Paralytic Sequel G Cochrane—p 86

Empyema of Maxillary Antrum in Infant E E Hughes—p 89

Diurnal Somnolence and Nocturnal Wakefulness in Lethargic Encephalitis—The chief feature in the two cases cited by Fletcher was a remarkable degree of somnolence during the day associated with wakefulness during the night Generally the sleepiness did not appear to be associated with any definite constitutional disturbance, in one case, however, the onset was associated with pains in the limbs and diplopia

Fatal Case of Emaciation—In Weber's case there was general visceroptosis with an atonic or hypotonic stomach, and probably a condition of achylia gastrica and so-called atrophy of the gastric glands after chronic gastritis The stomach was distended The patient had suffered from pain and discomfort on eating Examination of the gastric contents after an Ewald's test breakfast showed absence of free hydrochloric acid, and the total acidity was only 12 In its motor efficiency the stomach was imperfect, some of the barium-meal being present in the stomach after five hours The skiagram taken after twenty-four hours showed the stomach empty, but it likewise showed marked ptosis of the transverse colon *and the whole of the colon full of the barium-meal* The patient was extremely thin—all skin and bones—as if almost all the subcutaneous fat had disappeared The loss of fat differed from that seen in lipodystrophia progressiva inasmuch as it affected the whole body and limbs General emaciation became altogether extreme and was accompanied by increasing feebleness The abdomen was rather "sunken" The long, thin, "bony' fingers were a feature of the case The general development was somewhat infantile or retarded The patient had never menstruated There was no swelling to indicate the presence of mammary glands There was no axillary or pubic hair The skin was dry and rather sallow, but there was no anemia In some parts—for instance, in the gluteal regions—the skin had a slightly senile appearance The patient had a most extreme condition of "erythema ab igne" (reticulated erythema with pigmentation) of the front of the legs The brachial systolic blood pressure was 100-116 mm of mercury There was no suspicion of inherited syphilis She had always been a poor eater and had always been inclined to feel chilly, with a tendency to cold hands and feet She took less and less food and became still more emaciated She complained of feeling sick if she ate much, and once at least she actually vomited She died (apparently from exhaustion)

Case of Diphtheria of Penis—In Cochrane's case, the penis seems primarily and alone to have been affected, and postdiphtheritic paralysis of a severe type developed, as though from an acute faucial attack The source of infection could not be traced

British Medical Journal, London

July 2 1921 **2**, No 3157

Principle of Repeated Medication for Curing Infections R Ross—p 1

Chronic Nasopharyngeal Infection Chronic Toxemia and Distressed Heart in Children C P Lapage—p 4

*Removal of Stones from Pelvic Portion of Ureter W H Battle—p 6

*Results of Institutional Treatment in Surgical Tuberculosis E D Telford—p 7

Sight Efficiency in General Population J Kirk—p 8

Case of Placenta Praevia Centralis, with Spontaneous Delivery of Child A C Blair—p 10

Antitetanus Serum Anaphylaxis R S Woods—p 11

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Colon and Colitis Dawson—p 31

*Acute Infections of Endometrium R Hobbs—p 35

Intravenous Administration of Calcium Acetyl Salicylate A Campbell—p 37

Extraversion of Bladder A A Lendon and H S Newland—p 38

Estimation of Physiologic Cost of Muscular Work J B Orr and J P Kinloch—p 39

*Control of Hemorrhage by Intramuscular Injection of Calcium Chlorid W R Grove and H W C Vines—p 40

Removal of Stones from Pelvic Portion of Ureter—The method which Battle employed in three cases was this An oblique incision was made from midway between the anterior superior spine and the umbilicus in the direction of the pubic spine The sheath of the rectus was opened for the whole length of the incision, the muscle separated from its sheath, and strongly retracted inwards The deep epigastric vessels were found and divided between ligatures The posterior sheath and peritoneum were incised in the center of the upper part of the wound to an extent permitting an easy passage of the fingers of the left hand, which were carried to the place in the ureter where the stone had been shown to lie by the roentgen rays Before the final stage of the operation the abdominal contents were protected and pushed out of the way with a strip of gauze When the stone was located the forefinger of the other hand was worked extraperitoneally directly to the spot, separating the peritoneum to a sufficient extent down to and a little beyond the stone An attempt may be made to bring the stone higher up in the ureter if this is thought desirable, it does not always succeed, but it can be lifted upward and forward with the ureter to a useful extent In Battle's cases the lining of the ureter at the point of impaction was rough, and this appeared to be the reason why the stones could not be moved before the incision of release was made As the stone was so definitely localized and the part of the ureter where the incision had to be made so clearly defined, it was possible to cut cleanly along the middle of the prominence felt, without varying from the straight line In addition, the fixation of the stone by the fingers of the left hand made it easier to avoid any accompanying artery, and enabled the incision of the ureter to be made firmly and accurately

Institutional Treatment in Surgical Tuberculosis—The results of the conservative treatment of 159 children with tuberculous disease of the hip, spine, knee and foot are analyzed by Telford Out of 100 children between the ages of 5 and 16 years, treated under good conditions for tuberculous disease of the spine and lower extremities, sixty-eight are cured and able to attend an ordinary school or follow a useful employment, ten received no permanent benefit, and twenty-two died from the disease or its sequels The mortality is much less for disease of the hip, nine out of fifty-two The knee shows only two out of thirty-one Six cases of disease of the ankle and foot recovered completely Of the thirty-five patients who died, no fewer than twenty-nine patients showed evidence of abscess formation on admission

Acute Infections of Endometrium—In acute septic conditions of the uterus, Hobbs is of opinion that careful treatment of the endometrium and draining the cavity of the uterus does not produce an extension of the existing inflammation but lessens it The cavity of the uterus can be approached time after time until the temperature becomes normal, the uterus firm and the discharge is got rid of Inflammatory conditions in the adnexa of the uterus are not only no bar to but are an the center of the infection must be therein This is proved indication of the need of treatment of the endometrium, since by the fact that the physical signs subside much more rapidly

when the uterus is drained than if left alone In a large number of cases the origin of the pain and discomfort lies not in the tubes but in the uterus, because it is inflamed and heavy Unless these lesions outside the uterus are of the grossest kind no operation should be performed, at any rate until thorough methodical treatment of the endometrium has first been tried Exacerbations of salpingitis have proved far less frequent since Hobbs followed this line of treatment

Hemorrhage Controlled by Calcium Chlorid Injection—One gram of calcium chlorid is dissolved in about 100 minims of water and injected deeply into the gluteal muscles, it must not be injected subcutaneously or sloughing of the skin will be caused If a solution of the salt is made up to a concentration of 1 in 4 (2 drams in an ounce is a convenient quantity), 4 minims then contain 1 gram This solution has been kept for weeks, and in this strength apparently remains sterile indefinitely If the solution is not quite clear, it must be shaken before use The 4 minims are diluted to 100 mm with boiled water, and in some hundred or more injections nothing abnormal has developed at the site of injection Generally the injection is painless, though a few patients have complained of pain and stiffness running down the limb In the blood, the calcium value is found to rise slowly to a maximum in six hours and then to remain practically constant for at least twenty-four hours As a practical application of these results it has been found perfectly safe to give a second injection at the end of twenty-four hours, and, if necessary, a third, twenty-four hours later, this was actually done in a case of hematemesis In anticipating hemorrhage at or after operation, an injection not more than two hours before, or even at the time of operation, would seem indicated

Dublin Journal of Medical Science

July 1921 4 No 17

Lichen Axillaris Lichen Annularis Etiology of Lichen W Beatty —p 289
*Nature of Internal Secretion of Pancreas W M Crofton —p 301
Roentgen Ray Treatment with Reference to Gynecologic Practice E J Watson —p 309
*Report of Rotunda Hospital J S English and A H Davidson —p 317

Nature of Pancreas Secretion—Crofton endeavors to show that the internal secretion of the pancreas is not a "hormone" such as the secretins, thyroid substance pituitary extract, and so on, but is an essential part of a compound ferment by means of which synthesis and hydrolysis, that is, anabolism and katabolism of different food material is brought about

Report of Rotunda Hospital—In the extern maternity of the Rotunda Hospital there were attended during the year 1918-1919, 1 505 cases of labor with seven maternal deaths, two of these were due to pneumonia during the epidemic of influenza In the intern maternity 2,036 cases were treated and 1,785 women delivered Among these were five cases of accidental hemorrhage, all of the external type, and all recovered Eleven cases of unavoidable hemorrhage included three deaths—two from septic infection and one a 7-para, twenty-five weeks pregnant, with severe toxemia Twenty-one cases of contracted pelvis were treated, seventeen babies were born alive, and one mother died of influenzal pneumonia Pubiotomy was performed eight times and delivery completed with forceps three times, and after version on account of prolapse of the cord once Five women had the pubic bone divided from one week to two months before labor, and two of these delivered themselves spontaneously One woman had pubiotomy done in 1912 and delivered herself spontaneously, another done in 1916 was delivered easily with forceps Cesarean section was done nine times, six being for contracted pelvis, and one of these women had had the operation four times previously Forceps were applied in eighty-eight cases, once to impacted breech and once to an after-coming head Nine children were born dead Forty-three children were delivered as breech presentations with five dead, one macerated The morbidity for the year on the B M A standard was 6 19, it was increased by the epidemics of influenza which occurred in November and February, but, on the whole, the hospital remained wonderfully free of the infection Of the cases of genital origin, one received vaginal douching only, twenty-six uterovaginal douching, fourteen applications to the peritoneum only Vaccine was given in seventeen cases and hysterectomy done in three Only three patients received more than two douches In twelve cases streptococci were found and ten recovered, in three cases streptococci with coli were found and two recovered Hysterectomy was done in three cases and one recovered In this case when the uterus was removed it was found to contain a small placenta firmly inherent to the fundus and evidently due to a twin pregnancy which had died and been retained

Lancet, London

July 9 1921 2, No 5106

Etiology of Skin Diseases A Whitfield —p 61
*Capillary Pressure and Circulation in Shock L Hill and J McQueen —p 65
*Diagnosis and Treatment of Diphtheria F H Thomson —p 68
Effects of Hot and Cold Applications to Surface of Body on Temperature of Muscles Liver Kidneys and Brain J J R Macleod and N B Taylor —p 70
*Anomalous Response to Direct Faradic Stimulation of Nerve J S B Stopford —p 73
Two Cases of Aplastic Anemia E C P Williams —p 74

Capillary Pressure and Circulation in Shock—Hill and McQueen state that the accurate measurement of capillary blood pressure throws light on stasis Lost arterial blood pressures are dangerous because the capillary kinetic energy of blood flow is very small with normal arterial blood pressure There is a very small margin of safety in the capillary area

Diphtheria—The main points in the treatment of acute diphtheria, Thomson says, apart from suitable nourishment, are adequate dosage of antitoxin and complete rest in the recumbent position All other treatment falls into insignificance beside them, and any treatment which interferes with them is bad There is evidence which goes to show that antitoxin neutralizes or partly neutralizes the toxin in circulation, and that larger doses may partly neutralize toxin loosely combined with the cells but not that which has become fixed The deductions appear to be that the earlier one can treat the disease the better, and that if one fails to get the patient early the dosage should be greater, this is in accord with clinical experience The method of administering the antitoxin affects the dosage to some extent, but the main points affecting it are the severity of the attack and the stage of the disease It is, however, very difficult to estimate the dosage in any given case, and the only safe method appears to be to err purposely on the ample side It is wise in all severe cases to add say, 4 000 units more to cover possible error In Thomson's opinion, the intramuscular method is preferable and the injection is best made deeply into the vastus externus If one has not erred in one's estimate of the severity of the attack, as indicated by a definite increase in symptoms in twelve hours after the injection many cases will not require more antitoxin In mild faucial cases second doses will seldom be necessary In moderate faucial cases some will require second doses of from 8 000 to 10 000 units In severe faucial and laryngeal cases second doses of from 12 000 to 16 000 units will be required in a goodly number In many very severe faucial cases second doses, usually varying from 16 000 to 20 000 units, will be required, but occasionally it will be advisable to repeat the first-day dose in twenty-four hours or less if the faucial swelling and cellulitis have increased and to give a second dose of 20,000 units should there be no improvement by that time Cases suffering from laryngeal diphtheria with no faucial or nasal involvement soldom require more than 18 000 units Nasal diphtheria with membrane but no faucial involvement, and conjunctival diphtheria with no faucial involvement, seldom require a second dose A discharge from the nose, whether blood stained or not, in which is found the diphtheria bacillus but no membrane formation, seldom requires antitoxin treatment

Anomalous Response to Direct Faradic Stimulation of Nerve—The experience gained by Stopford from a study of two patients seems to suggest very strongly that the anomalous occurrence of a response in muscles on direct faradic stimulation of a nerve at operation may be explained by the regeneration of afferent fibrils down efferent pathways in the

distal segment of the nerve If future observations prove this theory to be correct it must have an important influence on the procedure adopted by the surgeon at the second operation Clearly, if this is the correct interpretation of the etiology of this curious phenomenon, the surgeon must not be mislead and induced by its presence to leave the nerve alone and expect a functional recovery, but must resect the affected piece of nerve and perform an end-to-end suture

National Medical Journal of China, Shanghai

March 1921 **7**, No 1

Famine Fever W W Peter —p 5
Explanation of Construction and Working of Delouser J H Ingram —p 23
Reduction of Fractures by Open Method W S New —p 28

Medical Journal of South Africa, Johannesburg

April 1921, **16**, No 9

Intestinal Radiography for Chronic Appendicitis L E Ellis —p 163
Clinical Side of Scurvy in Mine Native Laborer S Donaldson —p 169

South African Medical Record, Cape Town

June 11, 1921 **19**, No 11

Improved Apparatus for Administration of Warmed Ether Vapors G W B Daniell —p 207

Archives Medicales Belges, Liége

April, 1921 **74**, No 4

*Nystagmus and Equilibration V G Brabant —p 257
The Lipoids of the Leukocytes E Savini —p 325

Nystagmus and Equilibration—Brabant is chef du laboratoire de psychophysiologie of aeronautics in Belgium, and his experience and research have convinced him that the balancing sense is in the eyes rather than in the internal ear The external muscles of the eyeballs—their variable state of contraction corresponding to the modes of the balancing of the eyeballs—seem to be, he says, the principal peripheral organs of equilibration All the physiologic findings conform to this

Bulletin de l'Académie de Medecine, Paris

June 14 1921 **85**, No 24

*Tuberculous Sputum F Bezançon and A Biros —p 696
*Heart Organotherapy A Martinet —p 701
*Old Syphilitic Myocarditis E Lenoble —p 703

Bacteriology of Tuberculous Sputum.—Bezançon and Biros take up the clump of fresh sputum on a wire and agitate it in four Petri dishes of physiologic saline in turn, to rinse it of saliva, etc, and then stain it as usual In twenty-three of 120 examinations thus made the tubercle bacillus alone was found In six other cases there was secondary infection, in one case the pneumococcus was found so numerous that this explained the symptoms as an interlobar pneumococcus pleuritis complicating the tuberculous process These secondary infections explain many clinical pictures which we have been ascribing to exacerbations of the tuberculous processes They explain the apparent anomaly of grave physical findings with only few tubercle bacilli in the sputum The secondary infectious process may fan the tuberculosis process into a brief flame which subsides with the former

Heart Organotherapy—Reviewed in Paris Letter

Old Syphilitic Myocarditis—Lenoble applies the term *deshabitees* to the lesions he has in mind as the spirochetes have "moved out" and specific treatment is futile and may do harm The onset of disturbances is abrupt and violent and periods of improvement are brief There may be a general weakness, which seems to be an essential characteristic of neglected syphilis There is dyspnea on exertion, and sometimes intense cyanosis of face and extremities The attacks recur frequently, and there may be precordial pains of the angina pectoris type Death occurred suddenly in one of his nine cases of the kind

June 21, 1921 **85**, No 25

Cardiac Organotherapy L Renon et al —p 707 See Paris Letter
*Ulceration with Rectal Cancer L Renon and P Blamoutier —p 715
*Traffic in Cocain Courtois Suffit and R Giroux —p 720

Perforation of Small Intestine in Course of Rectal Cancer—In the case described by Rénon the man of 40 had been having what seemed to be rebellious dysentery for nearly seven years, explained by the necropsy findings to have been due to a plastic limitis of the rectum terminating in an annular cancer The latter might have been discovered at any time by sigmoidoscopy Necropsy disclosed further secondary ulceration and perforation of the small intestine The lesions resembled those in animals for which Morgan's bacillus is responsible

Traffic in Cocain.—Courtois-Suffit and Giroux present data demonstrating the enormous spread of the traffic in cocain since the war, as the Germans are selling it in profusion for 600 francs per kilogram and it can be resold for 10 000 or 15 000 francs in France The soldiers of the armies of occupation take advantage of this to trade in it, and the aeroplanes favor the smuggling of the drug into France There were 151 arrests in France in 1920 of those trading in cocain, but the penalties were never more than three months' imprisonment and fines of from 100 to 1,000 francs One of these cocain traders had a handsome establishment for dancing parties When arrested he had 200 vials of cocain with the Merck label Another had 14 kg of the drug when arrested, and he claimed to have bought it from an American sergeant In their investigation two years ago, they found Paris the main center for the trade, but now it seems to be scattered all through the provinces

Bulletins de la Société Médicale des Hôpitaux, Paris

June 10 1921 **45**, No 20

The Duodenal Tube in Diagnosis of Chronic Jaundice F Rathery and Cambessédes —p 854
*Blocked Aerophagia F Ramond C Jacquelin and Borrien —p 856
*Inguinal Lymphogranulomatosis P Ravaut —p 865
Exophthalmic Goiter with Thyroid Tumor and Metastases. L Tixier and H Duval —p 874
Allyl Theobromin in Therapeutics Remond and Colombies —p 876
*Diagnosis of Spinal Cord Tumors etc D E Paulian —p 878
*Asthma from Idiosyncrasy to Potatoes Roch and P Schiff —p 882
Idiosyncrasy to Antipyrin Roch and P Gautier —p 886
Idiosyncrasy to Linseed Meal Roch and C Saloz.—p 888
Pulmonary Tuberculosis Involving Esophagus Lenoble et al —p 890

Blocked Aerophagia—Ramond and his co-workers apply this term to the condition when the swallowed air is unable to escape into the esophagus or bowel They describe the puzzling symptoms therefrom, and the peculiar roentgen-ray findings Treatment must aim to prevent ingestion of air and aid in its expulsion The knee-chest position may help, and a short walk is advisable after eating, refraining from reclining or bending over which tends to obstruct the opening into the esophagus A hot aromatic infusion after eating is always useful, and antispasmodics, if there is a tendency to spasm In extreme cases the daily use of a stomach tube may be necessary For this they prefer a tube like the Einhorn duodenal tube, only with stronger walls and made without any metal If an abdominal bandage has to be worn, it should not push up the stomach, as this will block the aerophagia still more

Subacute Inguinal Lymphogranulomatosis—Ravaut has encountered fourteen cases of this kind in the last six months Operative treatment has been the rule, to resect the mass of enlarged and suppurating glands, but in the last case he found an ameba in the pus This suggested emetin in treatment, and under subcutaneous or intravenous injections of emetin the cure was soon complete In four other cases fistulas persisting for months healed under the emetin likewise Physicians from the colonies who saw these patients commented on the resemblance between their lesions and those known in tropical regions as climatic buboes Emetin should be given a trial in the latter Ravaut has given emetin with good effect to date also in one case of glandular disease in the neck

Compression of the Spinal Cord—Paulian's experience has confirmed the diagnostic importance of the zone of hypoesthesia just above the zone of anesthesia, with compression of the spinal cord from a tumor or other cause The zone just above the anesthesia zone shows pronounced hypoesthesia, above this is a zone of slight hypoesthesia The upper and lower limit of the zone of pronounced hypoesthesia corresponds, he has found, to the upper and lower limit of the pressure In several cases with this as the guide, he found

the lesion in question invariably in the anticipated segment of the spinal cord

Asthma from Idiosyncrasy to Potato—The woman of 56 has been subject to asthma all her life but only recently was it traced to its cause in an idiosyncrasy to potato The anaphylactic asthma was accompanied by the hemoclasic shock, etc Roch and Schiff are now studying the case to determine which element in the potato is responsible for the anaphylaxis, so that they can apply it to desensitize the patient

Encéphale, Paris

May, 1921 **16**, No 5

Pathologic Anatomy of Pineal Gland Laignel Lavastine —p 225
Progressive Vasotrophic Neurosis of Hands A Obregia and C Urechia.—p 240
Acute Delirium in Course of Melancholia H Damaye —p 244
*Schizophrenia E Minkowski —p 247 Cont'd

Schizophrenia—Minkowski discusses this subject in connection with the conception of mental disease in general, and particularly Bleuler's conception of it

Lyon Medical, Lyons

June 10 1921, **130**, No 11

Present Status of Bone Grafting M Durand —p 473
Medical Impressions of Sweden L Duvernay —p 511

June 25 1921 **130**, No 12

*Suppuration in Both Suprarenals. E. Deglos —p 523
The Pseudomembranes Found in the Gassed R Rendu and J Parisot Martin —p 528

Suppuration in Both Suprarenals—Deglos' diagnosis was typhoid or paratyphoid as the woman of 28 had been having fever and malaise for two weeks with progressive prostration Bacteriologic and other tests gave negative findings, but necropsy after the sudden death in the third week revealed cheesy foci in both suprarenals, one being transformed completely into a cold abscess The case warns that this form of chronic suprarenal disease should be thought of in investigating cases of sudden death in persons complaining of extreme weakness, with low blood pressure In this case the course had been too fulminating for pigmentation to have a chance to develop

Nourrisson, Paris

July 1921 **9** No 4

*Pathogenesis of Athrepsia A B Marfan —p 193
*Stenosis of Pylorus in Infants P Rohmer —p 215
*Scabies in Infants H Lemaire —p 223
Rachitic Changes in Muscles G Banu —p 229
*Infant Welfare Work Dubost and François —p 239

Denutrition in Young Infants—Marfan has continued his research on athrepsia and hypothrepsia The grave forms are never observed, he says, in the breast fed, and he analyzes the differences between cow's milk and breast milk which are responsible for this different course of the nutritional disturbances The chemical differences cannot explain the whole, nor the extra work required to digest cow's milk, but the lack of the specific enzymes found in breast milk amply suffices to explain the progressive athrepsia to which the bottle fed are liable The enzymes and enzymoids of the infant organism are scanty and weak at first, but they are effectually reenforced by the ferments in breast milk, while the latter, in addition, is of extra easy digestion and assimilation When the infant fails to receive the trophic ferments which Nature provides for it in breast milk, its development suffers but the congenitally vigorous may produce enough ferments themselves to enable them to dispense with the maternal If not, or if ferment production becomes arrested, hypothrepsia and athrepsia may follow, and necropsy shows the reduction in bulk of the cytoplasm of the visceral and glandular cells that might be expected under such conditions Congenital debility is identical with the condition of the bottle fed who have lost their enzyme producing power The only difference is that this enzyme insufficiency is of intra-uterine instead of extra-uterine origin Both require the ferments in breast milk Athrepsia is therefore a deficiency disease, but not from deficiency of vitamins, there is nothing in athrepsia that resembles the symptoms of beriberi or scorbutus This theory is still conjectural, to demonstrate it would require research on the activity of enzymes and enzymoids in the breast fed and bottle fed, discriminating further between the healthy and those with nutritional disturbances The theory harmonizes with all the known facts, he says, and throws light on the physiology of infants, and is suggestive for medical practice Marfan adds that Finkelstein's theory of intoxication from defectively digested cow's milk fits with the above theory, but Finkelstein ascribes the chief poisonous action to the sugar and salts in cow's milk, regarding the casein as the least harmful element, with the butter fat midway between them Marfan adds, "The 'albumin milk' prepared to correspond with this assumption has not proved a success generally outside of Germany"

Stenosis of the Pylorus in Infants—Rohmer describes three cases of stenosis with hypertrophy of the pylorus and extreme dilation of the stomach In 265 cases on record, the dilation was marked in 10 per cent Aerophagia is a contributing factor, and lavage of the stomach is of great benefit The prognosis does not seem to be any graver with the dilation than without In two of his three cases the motor function of the stomach seemed normal several months after the prolonged course of daily lavage of the fasting stomach The third infant succumbed to an intercurrent infection at the age of 4 months

Scabies in Infants—In infants scabies assumes a pustular form, Lemaire remarks, and the differential diagnosis may be puzzling unless the soles are examined The aspect of the sole of the infant will often clear up the diagnosis in dubious cases of itching dermatitis He reports two cases which confirm that an infected scabies may prove fatal for a young infant A transient bacteriemia entailed foci of infection in viscera, lungs and meninges In one of the infants an accompanying eczema blanched out as a pulmonary focus became aggravated The pulmonary focus and the general condition improved under baths etc, which brought the eczema out again He has on several occasions noted this coincidence with the final recovery of the child

Infant Welfare Work—This communication describes the workings of the station at Mainville-Draveil which includes the placing of infants with women already nursing a child This *centre d'élevage* is proving very successful in connection with the well baby clinic once a week and social service in the homes

Paris Medical

June 11 1921 **11**, No 24

Acute Toxemic Appendicitis Without Peritonitis Descomps —p 469
Influenza in Young Children in Manchuria T Suzuki —p 473
Radium Treatment. M d'Halluin —p 475
Function After Chopart's Amputation C Roederer —p 478

June 18 1921 **11** No 25

*Filtrable Neurotropic Viruses P Harvier —p 485
*Radium Puncture of Uterine Cancers A Schwartz and Richard —p 493
Mixed Tumor of Roof of Palate Negrie —p 496

Neurotropic Filtrable Viruses—Harvier reviews the present status of our knowledge of the virus of rabies, of epidemic poliomyelitis, and of epidemic encephalitis Each of these diseases can be transmitted by inoculation of nerve centers and the two latter by inoculation with nasopharyngeal secretions from the sick and from carriers Different animal species show a different susceptibility, and there is no crossed immunity to these three diseases Epidemic encephalitis has given negative results to date in respect to vaccination and neutralization of the virus by serum

Radium Puncture—The radium emanation needles are plunged into the region of the uterine cancer, working through a laparotomy incision, to supplement the radium tube in the vagina Two cases are described to show the advantages of this method The cure has been complete for five months to date in one woman of 37 The other patient did not return to complete the course, and died not long after

June 25 1921 **11** No 26

Recent Progress in Orthopedics P Mauclaire —p 501
*Enteroptosis of Liver Origin R Glenard and Rouzaud —p 506
Headache with Periodical Mania. G Halberstadt.—p 513

Enteroptosis of Liver Origin.—Glenard and Rouzaud in reviewing the field of visceral ptosis say that there are few

pathologic conditions in which the treatment varies so widely from physician to physician as this Their own study of 13 women and 11 men with enteroptosis showed that the metabolism was sluggish, the blood pressure low, the viscosity high, pointing to insufficiency of the liver functioning This may be secondary to enteroptosis of mechanical origin, but in a certain proportion of cases the enteroptosis developed in consequence of primary disease of the liver In his practice at Vichy Glenard found that 25 to 33 per cent of all seeking relief there had pronounced sagging of the viscera, although this ptosis had seldom been recognized The Vichy waters restoring practically normal conditions in the liver, seemed to cure the tendency to ptosis at the same time In 9 such cases the liver disease was of infectious origin (typhoid, malaria, etc), in 19 of toxic, 28 traumatic, and in 12 of nervous origin, from grief, fright or overstrain The resulting congestion of the liver impedes the portal circulation and tends to induce enteroptosis, both mechanically and by the results of its impaired functioning Conditions may right themselves later by a process of compensation and by the return of the liver to normal

To regard enteroptosis, he says, as belonging only to surgery, is to mistake a single accident, a complication, for the whole general condition Of course constricting bands and cicatricial adhesion impeding bowel functioning require operative relief But otherwise, the treatment of enteroptosis should be with an abdominal supporting girdle, laxatives especially sodium sulphate in small doses, a diet with meat predominating, and a course of alkaline mineral waters of the Vichy type These medical measures are indispensable likewise after any operation for enteroptosis He advises to give a preliminary course of the mineral waters before proceeding to operate, it will frequently render surgical intervention unnecessary

Schweizerische medizinische Wochenschrift, Basel

June 9 1921 **51**, No 23

The Active Substances in Ergot K Spiro and A Stoll—p 525
*Results of Meniscus Operations After Industrial Accidents J Dubs—p 529
Relations Between Exophthalmic Goiter and Tuberculosis H Steck—p 535
*Cholecystitis at Basel A Vischer—p 538 Conc'n

Meniscus Operation After Industrial Accidents—Dubs discusses the remote results and disability from the standpoint of accident insurance His tables show that only 17 5 per cent of the 40 insured workmen have regained full earning capacity since the operation on the ruptured meniscus, and 82 5 per cent have received workmen's compensation for permanent disability In Baud's similar series in men that were not insured against accident, 80 per cent have regained full earning capacity, free from any subjective or objective disturbances His tabulated data teach that the decision as to the outcome of a meniscus injury should never be made until a year at least after the operation Conditions which seem irreparable at first may gradually right themselves

Acute Cholecystitis—Previous instalment mentioned on p 410

Policlinico, Rome

June 13, 1921 **28**, No 24

*Serodiagnosis of Syphilis S de Villa and A Ronchi—p 811
*Fulminating Urine Fever E Pirondini—p 816

Serodiagnosis of Syphilis—De Villa and Ronchi have been applying all the known means for diagnosis by deviation of complement or flocculation in the serum and spinal fluid of syphilis suspects, seeking to determine the element responsible for the specific reaction In their over 600 tests they also applied various modifications of the usual technic with different chemicals The findings are tabulated but they are not ready to draw deductions from them as yet, they say

Fulminating Urine Fever—Pirondini remarks that although the progress in technic has nearly banished fulminating intoxication from urine poisoning, yet it does still occur occasionally, fatal in a few hours In a case in his own experience, after operative treatment of stenosis of the urethra, the urine escaped both by the perineal buttonhole incision and the urethra On the eighteenth day dilatation was begun with a metal dilator, and proceeded smoothly, the patient in good condition, the urine clear In less than three hours rigors developed, with temperature up to 41 9 C and the man died in coma nine hours after the first attempt at dilatation, six hours after the first chill He queries whether an anaphylactic factor is involved, and compares this case with a similar experience in a man with cancer of the prostate The chills and high fever followed an attempt to introduce the urethroscope which revealed metastatic stenosis The alarming condition persisted for fifteen minutes and then gradually subsided In a third case, reported by Ricci, the dilating procedure had proceeded regularly for several sittings, but two hours after the last one chills and high fever developed, with death in coma the twelfth hour The danger seems to be from the penetration into the circulation of toxic substances during micturition after a dilating procedure which may have induced some erosion in the urethral mucosa If the urine in the bladder can be diluted or disinfected, this danger is reduced, but this was supposed to be mechanically impossible in Pirondini's fatal case, and in the others had not been thought of

June 20, 1921, **28**, No 25

*Revaccination During Epidemic Smallpox A Ilvento—p 843
*Testicle Anomalies A Balduzzi—p 850
Paraffin Tumor in Scrotum Santi Bivona—p 854
Inherited Morbid Taints Monteleone—p 856

Revaccination During Epidemic Smallpox—Ilvento analyzes some recent epidemics of variola in Italy to show that the protection conferred by a positive vaccination is very slight for the first two weeks afterward, if it can be said to protect at all The protection is more reliable by the end of the month, and it grows more potent as a few years pass, but individual conditions modify its duration

Testicle Anomalies—Balduzzi is inclined to regard retention of a testicle as a predisposing factor in hernia, an evidence of a general tendency to abnormal development He describes some cases, and remarks that no instance of it was found among 1,000 soldiers while the anomaly was noted in 0 226 per cent of 570 convicts

Riforma Medica, Naples

June 11 1921 **37**, No 24

Loeb s Stain for Gonococci No Improvement L Vercellino—p 553
*Manifestations from Pilocarpin in Brain Lesions C Besta—p 553
*Sclerous Perinephritis A Cassuto—p 556
*Tuberculosis of the Myocardium E Benvenuti—p 558
Progress in Medical Education A Lustig—p 560
Infectious Erythema in Children A Muggia—p 562

Action of Pilocarpin on Brain Lesions—Besta had occasion to inject pilocarpin in 200 cases of wounds of the brain He found that the drug induced characteristic symptoms according as the injury was in different areas and at different depths He therefore calls attention to this harmless and simple means for revealing the existence of lesions in the brain, and localizing them, possibly in the absence of all other diagnostic findings His research revealed a scope of influence from pilocarpin on the autonomic vegetative system beyond anything previously suspected The findings confirm those obtained with ether in cases of cerebral injury, spasms and contracture occur with exaggeration of the reflexes when ether is given after a brain wound The pilocarpin induced tremor of one arm, or jacksonian epilepsy, or lacrimation or salivation, exaggeration of reflexes or other manifestations, the type differing with the site of the lesion, as he explains in detail

Hyronephrosis with Perinephritis—Cassuto calls attention to the enormous sclero-adipose perinephritis in the man of 44 with calculi in the hydronephrotic kidney

The Heart in the Tuberculous—Benvenuti gives an illustrated description of a case of a large tubercle in the myocardium of the young man who had succumbed to the progress of the heart disease in the course of pulmonary tuberculosis

Rivista Critica di Clinica Medica, Florence

May 15 1921 **22** No 14

Splenomegalia with Polycythemia M Bufalini—p 157 Conc n

May 25 1921 22 No 15

*Transitional Forms of Hereditary Ataxia G Tadder —p 169
Fractional Analysis of Stomach Content D Arbelo —p 178

Transitional Forms of Hereditary Ataxia—In the case described by Tadder, the young man had unmistakable inherited syphilis and, in addition presented all the symptoms characteristic of Friedreich's ataxia and some of the symptoms of Marie's hereditary cerebellar ataxia The Friedreich and the Marie types must thus be regarded as different forms of the same disease, not as separate morbid entities

June 5 1921 22 No 16

*Case of Quincke's Edema with Urticaria C Alessandri —p 181
Concn No 17, p 193

Quincke's Edema with Urticaria—The father of the patient of 18 was a hard drinker, but the young man had always been supposedly healthy until in 1919 he was jailed for twelve days on account of rioting Since then he has had recurring angioneurotic edema with intense pruritus and urticaria rebellious for months to all measures until 0 5 gm of peptone was given by mouth half an hour before each of the three meals of the day Under this antianaphylaxis the morbid tendency gradually subsided to a complete cure permanent during the four months to date

Archivos Españoles de Pediatria, Madrid

April 1921 5 No 4

Schick Reaction in Diphtheria Munoyerro and Ramos Acosta —p 193
*Tendon Transplantation for Radial Paralysis Riosalido —p 210

Tendon Transplantation for Radial Paralysis—Riosalido's colored plates show the technic and perfect outcome of transplantation of the tendons of the flexor muscles to counteract radial paralysis The transplanted muscles are flexors and they have to be trained to extension The intelligence of his patient a young man of 16 undoubtedly cooperated in the prompt success The paralysis was the result of an osteomyelitic focus in the humerus with fracture of the bone The tendon operation was a modification of Jones' technic, severing the muscles through an incision on the palmar side The proximal stumps were then brought out on the dorsal side through the soft parts, and were sutured to the extensors to the thumb extensor separately and to the bunched finger extensors

Brazil-Medico, Rio de Janeiro

May 21 1921 35 No 21

*Treatment of Anaphylactic Phenomena A de Vasconcellos —p 259
The Influence of the Sea on Health J Drummond —p 262

Treatment of Anaphylaxis—De Vasconcellos gives an able summary of the history of anaphylaxis, the anaphylactic shock and the attempts to utilize it in therapeutics and in functional tests He cites Danysz theory that the action is due to an influence on the nervous system and relates that the latter's method of treating chronic intestinal disease, eczema, asthma, neurasthenia and insomnia by antigens derived from the patients' stools is proving as effectual in his hands as in Danysz' own experience with cures in 80 per cent In five cases of epilepsy, in private practice and in a number of hospital cases—all adults—the seizures seem to be milder and the intervals longer Chronic constipation is also favorably influenced He gives these entero-antigens by the mouth or subcutaneously The visible, palpable and proven benefit in his experience testifies he reiterates, to the value of this form of therapeutic antianaphylaxis

Revista Mexicana de Biologia, City of Mexico

May 1921 1 No 5

Importance of Study of Biology A Aragon —p 203
*Meat of Cattle with Malignant Edema S J Bonansea —p 208
The Interval Since Death as Estimated from the Blood Findings F Castillo Najera —p 213
Action of Lichens on Plant Hosts Guillermo Gandara —p 215

Meat of Cattle with Malignant Edema—The cattle had been vaccinated against anthrax but this did not prevent malignant edema from decimating the herd The meat from the sick cattle did not seem to induce any disturbances among those that ate it or handled it

Semana Medica, Buenos Aires

May 19 1921 28 No 20

Encysted Pelvic Abscess G Bosch Arana —p 569
*The Pituitary and Gestation Manuel Luis Perez —p 580 Concln

Rectal Access to Pelvic Abscess—Bosch Arana refers to an encysted abscess in the pouch of Douglas, for which appendicitis is usually responsible In two of his three cases of the kind the symptoms had been mistaken for kidney colic or acute colitis The clinical picture includes pain in the hypogastrium pollakiuria, pains in the lumbar region and bowel with frequent desire for defecation His illustrations readily explain these symptoms and show how rectal evacuation is logical and simple He uses for the purpose a twin drain tube It is like two stout catheters soldered together with openings in the curving tips which are introduced into the abscess cavity One tube serves for injection of the disinfecting fluid the other has three openings below for draining the rectum The only incision is that through the rectal wall into the abscess, and this is lined by the fluid with which the abscess is rinsed out The gases and feces pass out readily through the ample fenestrated tube while the abscess cavity can be flushed at will By clamping the outflow tube, the rectum can be flushed likewise The twin drain tubes are left in place otherwise unmolested for from five to seven days as required The temperature drops and without the dangers of a laparotomy or other intervention beyond the simple rectotomy, recovery is soon complete The patient is kept from having bowel movements as after an operation for piles, until the tubes are removed Then a purge is given and the rectal incision heals spontaneously

The Pituitary and Gestation—Perez summarizes what is known in regard to the physiology of the pituitary and the effects of its removal in gravid and nongravid animals describing his own research in this line with twenty-three dogs These and other experiments have demonstrated he thinks that the pituitary hypertrophies during gestation testifying to exaggerated functioning The pituitary can be easily removed but in gravid animals this is inevitably fatal in a few hours, of the nongravid male and female dogs, only 33 per cent survived the hypophysectomy

Siglo Medico, Madrid

May 21 1921 68 No 3519

Seashore Resorts in Psychoneuroses E Fernandez Sanz —p 477
*Roentgen Ray Treatment of Metrorrhagia J and S Ratera —p 479
*Treatment of Scoliosis J Decref —p 480 Contd
*Syphilis as a Factor in Epilepsy C A Bambaren —p 485 Concln
Tetanus Localized in the Members E Chauvin —p 487 Contn

Roentgen Ray Treatment of Metrorrhagia—The Rateras report here a case of recurring profuse hemorrhages from a small fibroma of the uterus in a woman of 45 She had lost 13 kg in weight during the last two months Under deep roentgen-ray treatment with twelve fields to a total of 300 X units in thirteen days the hemorrhagic tendency subsided completely

Scoliosis and Its Treatment—In this instalment of Decref's study of habitual scoliosis he emphasizes the importance of being on the alert to detect scoliosis in its incipiency and ward off further damage He emphasizes the necessity for watching out for endocrine insufficiency and giving the proper organotherapy to restore the balance in the ductless gland system The proportion of girls with scoliosis is much larger than of boys—the puberty process seems to be more complex in girls But once installed the scoliosis in boys is of a graver type probably because boys and youths do harder physical work The physician's main task is to watch out for and correct the tendency to scoliosis in its early stages He warns that braces in this first stage do more harm than good

Syphilis as Etiologic Factor in Epilepsy—Bambaren draws the balance sheet of the conception of syphilis, inherited or acquired as a factor in epilepsy, citing testimony for and against it including a number of articles in THE JOURNAL and Levy Bing's thirteen cases of essential syphilis with an unmistakable history of syphilis in all, and remarkable improvement under treatment for syphilis He remarks in conclusion 'How difficult it is for new ideas to gain a foothold ' as his comment on Strumpell's denial that inherited

pathologic conditions in which the treatment varies so widely from physician to physician as this Their own study of 13 women and 11 men with enteroptosis showed that the metabolism was sluggish, the blood pressure low, the viscosity high, pointing to insufficiency of the liver functioning This may be secondary to enteroptosis of mechanical origin, but in a certain proportion of cases the enteroptosis developed in consequence of primary disease of the liver In his practice at Vichy Glenard found that 25 to 33 per cent of all seeking relief there had pronounced sagging of the viscera, although this ptosis had seldom been recognized The Vichy waters, restoring practically normal conditions in the liver, seemed to cure the tendency to ptosis at the same time In 9 such cases the liver disease was of infectious origin (typhoid, malaria, etc), in 19 of toxic, 28 traumatic, and in 12 of nervous origin, from grief, fright or overstrain The resulting congestion of the liver impedes the portal circulation and tends to induce enteroptosis, both mechanically and by the results of its impaired functioning Conditions may right themselves later by a process of compensation and by the return of the liver to normal

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*Fulminating Urine Fever E Pirondini—p 816

Serodiagnosis of Syphilis—De Villa and Ronchi have been applying all the known means for diagnosis by deviation of complement or flocculation in the serum and spinal fluid of syphilis suspects, seeking to determine the element responsible for the specific reaction In their over 600 tests they also applied various modifications of the usual technic with different chemicals The findings are tabulated but they are not ready to draw deductions from them as yet, they say

Fulminating Urine Fever—Pirondini remarks that although the progress in technic has nearly banished fulminating intoxication from urine poisoning, yet it does still occur occasionally, fatal in a few hours In a case in his own experience, after operative treatment of stenosis of the urethra, the urine escaped both by the perineal buttonhole incision and the urethra On the eighteenth day dilatation was begun with a metal dilator, and proceeded smoothly, the patient in good condition, the urine clear In less than three hours rigors developed, with temperature up to 41 9 C and the man died in coma nine hours after the first attempt at dilatation, six hours after the first chill He queries whether an anaphylactic factor is involved, and compares this case with a similar experience in a man with cancer of the prostate The chills and high fever followed an attempt to introduce the urethroscope which revealed metastatic stenosis The alarming condition persisted for fifteen minutes and then gradually subsided In a third case, reported by Ricci, the dilating procedure had proceeded regularly for several sittings, but two hours after the last one chills and high fever developed, with death in coma the twelfth hour The danger seems to be from the penetration into the circulation of toxic substances during micturition after a dilating procedure which may have induced some erosion in the urethral mucosa If the urine in the bladder can be diluted or disinfected, this danger is reduced, but this was supposed to be mechanically impossible in Pirondini's fatal case, and in the others had not been thought of

June 20 1921, **28**, No 25

*Revaccination During Epidemic Smallpox A Ilvento—p 843
*Testicle Anomalies A Balduzzi—p 850
Paraffin Tumor in Scrotum Santi Bivona—p 854
Inherited Morbid Taints Monteleone—p 856

Revaccination During Epidemic Smallpox—Ilvento analyzes some recent epidemics of variola in Italy to show that the protection conferred by a positive vaccination is very slight for the first two weeks afterward, if it can be said to protect at all The protection is more reliable by the end of the month, and it grows more potent as a few years pass, but individual conditions modify its duration

Testicle Anomalies—Balduzzi is inclined to regard retention of a testicle as a predisposing factor in hernia, an evidence of a general tendency to abnormal development He describes some cases, and remarks that no instance of it was found among 1,000 soldiers while the anomaly was noted in 0 226 per cent of 570 convicts

Riforma Medica, Naples

June 11, 1921 **37**, No 24

Loeb's Stain for Gonococci No Improvement L Vercellino—p 553
*Manifestations from Pilocarpin in Brain Lesions C Besta—p 553
*Sclerous Perinephritis A Cassuto—p 556
*Tuberculosis of the Myocardium E Benvenuti—p 558
Progress in Medical Education A Lustig—p 560
Infectious Erythema in Children A Muggia.—p 562

Action of Pilocarpin on Brain Lesions—Besta had occasion to inject pilocarpin in 200 cases of wounds of the brain He found that the drug induced characteristic symptoms according as the injury was in different areas and at different depths He therefore calls attention to this harmless and simple means for revealing the existence of lesions in the brain, and localizing them, possibly in the absence of all other diagnostic findings His research revealed a scope of influence from pilocarpin on the autonomic vegetative system beyond anything previously suspected The findings confirm those obtained with ether in cases of cerebral injury, spasms and contracture occur with exaggeration of the reflexes when ether is given after a brain wound The pilocarpin induced tremor of one arm, or jacksonian epilepsy, or lacrimation or salivation, exaggeration of reflexes or other manifestations, the type differing with the site of the lesion, as he explains in detail

Hyronephrosis with Perinephritis—Cassuto calls attention to the enormous sclero-adipose perinephritis in the man of 44 with calculi in the hydronephrotic kidney

The Heart in the Tuberculous—Benvenuti gives an illustrated description of a case of a large tubercle in the myocardium of the young man who had succumbed to the progress of the heart disease in the course of pulmonary tuberculosis

Rivista Critica di Clinica Medica, Florence

May 15 1921 **22** No 14

Splenomegalia with Polycythemia. M Bufalini—p 157 Conc'n

May 25 1921 **22** No 15

*Transitional Forms of Hereditary Ataxia G Taddei —p 169
Fractional Analysis of Stomach Content D Arbeláez —p 178

Transitional Forms of Hereditary Ataxia—In the case described by Taddei, the young man had unmistakable inherited syphilis and, in addition, presented all the symptoms characteristic of Friedreich's ataxia and some of the symptoms of Marie's hereditary cerebellar ataxia The Friedreich and the Marie types must thus be regarded as different forms of the same disease, not as separate morbid entities

June 5 1921 **22** No 16

*Case of Quincke's Edema with Urticaria C Alessandri —p 181
Concn No 17 p 193

Quincke's Edema with Urticaria—The father of the patient of 18 was a hard drinker, but the young man had always been supposedly healthy until in 1919 he was jailed for twelve days on account of rioting Since then he has had recurring angioneurotic edema with intense pruritus and urticaria rebellious for months to all measures until 0 5 gm of peptone was given by mouth half an hour before each of the three meals of the day Under this antianaphylaxis, the morbid tendency gradually subsided to a complete cure permanent during the four months to date

Archivos Españoles de Pediatria, Madrid

April 1921 **5**, No 4

Schick Reaction in Diphtheria Munoz erro and Ramos Acosta —p 193
*Tendon Transplantation for Radial Paralysis Riosalido —p 210

Tendon Transplantation for Radial Paralysis—Riosalido's colored plates show the technic and perfect outcome of transplantation of the tendons of the flexor muscles to counteract radial paralysis The transplanted muscles are flexors and they have to be trained to extension The intelligence of his patient, a young man of 16, undoubtedly cooperated in the prompt success The paralysis was the result of an osteomyelitic focus in the humerus, with fracture of the bone The tendon operation was a modification of Jones' technic, severing the muscles through an incision on the palmar side The proximal stumps were then brought out on the dorsal side through the soft parts, and were sutured to the extensors, to the thumb extensor separately and to the bunched finger extensors

Brazil-Medico, Rio de Janeiro

May 21 1921 **35** No 21

*Treatment of Anaphylactic Phenomena A de Vasconcellos —p 259
The Influence of the Sea on Health J Drummond —p 262

Treatment of Anaphylaxis—De Vasconcellos gives an able summary of the history of anaphylaxis, the anaphylactic shock and the attempts to utilize it in therapeutics and in functional tests He cites Danysz' theory that the action is due to an influence on the nervous system and relates that the latter's method of treating chronic intestinal disease eczema, asthma neurasthenia and insomnia by antigens derived from the patients' stools is proving as effectual in his hands as in Danysz' own experience with cures in 80 per cent In five cases of epilepsy, in private practice and in a number of hospital cases—all adults—the seizures seem to be milder and the intervals longer Chronic constipation is also favorably influenced He gives these entero-antigens by the mouth or subcutaneously The visible palpable and proven benefit in his experience testifies he reiterates, to the value of this form of therapeutic antianaphylaxis

Revista Mexicana de Biología, City of Mexico

May 1921 **1** No 5

Importance of Study of Biology A Aragon —p 203
*Meat of Cattle with Malignant Edema S J Bonansea —p 208
The Interval Since Death as Estimated from the Blood Findings F Castillo Najera.—p 213
Action of Lichens on Plant Hosts Guillermo Gandara —p 215

Meat of Cattle with Malignant Edema—The cattle had been vaccinated against anthrax but this did not prevent malignant edema from decimating the herd The meat from the sick cattle did not seem to induce any disturbances among those that ate it or handled it

Semana Medica, Buenos Aires

May 19 1921 **28** No 20

Encysted Pelvic Abscess G Bosch Arana —p 569
*The Pituitary and Gestation Manuel Luis Perez —p 580 Concn

Rectal Access to Pelvic Abscess—Bosch Arana refers to an encysted abscess in the pouch of Douglas, for which appendicitis is usually responsible In two of his three cases of the kind the symptoms had been mistaken for kidney colic or acute colitis The clinical picture includes pain in the hypogastrium, pollakiuria, pains in the lumbar region and bowel, with frequent desire for defecation His illustrations readily explain these symptoms and show how rectal evacuation is logical and simple He uses for the purpose a twin drain tube It is like two stout catheters soldered together with openings in the curving tips which are introduced into the abscess cavity One tube serves for injection of the disinfecting fluid the other has three openings below for draining the rectum The only incision is that through the rectal wall into the abscess, and this is laved by the fluid with which the abscess is rinsed out The gases and feces pass out readily through the ample fenestrated tube while the abscess cavity can be flushed at will By clamping the outflow tube, the rectum can be flushed likewise The twin drain tubes are left in place otherwise unmolested for from five to seven days as required The temperature drops and without the dangers of a laparotomy or other intervention beyond the simple rectotomy recovery is soon complete The patient is kept from having bowel movements as after an operation for piles, until the tubes are removed Then a purge is given and the rectal incision heals spontaneously

The Pituitary and Gestation—Perez summarizes what is known in regard to the physiology of the pituitary and the effects of its removal in gravid and nongravid animals describing his own research in this line with twenty-three dogs These and other experiments have demonstrated he thinks that the pituitary hypertrophies during gestation testifying to exaggerated functioning The pituitary can be easily removed, but in gravid animals this is inevitably fatal in a few hours, of the nongravid male and female dogs only 33 per cent survived the hypophysectomy

Siglo Medico, Madrid

May 21 1921 **68**, No 3519

Seashore Resorts in Psychoneuroses E Fernandez Sanz —p 477
*Roentgen Ray Treatment of Metrorrhagia J and S Ratera —p 479
*Treatment of Scoliosis J Decref —p 480 Contd
*Syphilis as a Factor in Epilepsy C A Bambaren —p 485 Concn
Tetanus Localized in the Members E Chauvin —p 487 Contn

Roentgen Ray Treatment of Metrorrhagia—The Rateras report here a case of recurring profuse hemorrhages from a small fibroma of the uterus in a woman of 45 She had lost 13 kg in weight during the last two months Under deep roentgen-ray treatment with twelve fields to a total of 300 X units in thirteen days, the hemorrhagic tendency subsided completely

Scoliosis and Its Treatment—In this instalment of Decref's study of habitual scoliosis he emphasizes the importance of being on the alert to detect scoliosis in its incipiency and ward off further damage He emphasizes the necessity for watching out for endocrine insufficiency and giving the proper organotherapy to restore the balance in the ductless gland system The proportion of girls with scoliosis is much larger than of boys—the puberty process seems to be more complex in girls But once installed the scoliosis in boys is of a graver type probably because boys and youths do harder physical work The physician's main task is to watch out for and correct the tendency to scoliosis in its early stages He warns that braces in this first stage do more harm than good

Syphilis as Etiologic Factor in Epilepsy—Bambaren draws the balance sheet of the conception of syphilis inherited or acquired as a factor in epilepsy, citing testimony for and against it including a number of articles in THE JOURNAL and Levy Bing's thirteen cases of essential syphilis with an unmistakable history of syphilis in all and remarkable improvement under treatment for syphilis He remarks in conclusion How difficult it is for new ideas to gain a foothold' as his comment on Strumpell's denial that inherited

syphilis has ever been conclusively demonstrated as a factor in essential epilepsy

Archiv fur Verdauungs-Krankheiten, Berlin

1921 **27**, No 6

*Multiform Syphilitic Gastric Ulcer W A Brams —p 375
*Duodenal Ulcer Under Age of Ten J Alsberg —p 396
Gastro Intestinal Disturbances in Malaria E Lyon —p 407

Syphilitic Gastric Ulceration—Brams has found only 7 cases on record in which the necropsy findings confirmed the clinical history but in 30 other cases the course afforded presumptive evidence of the syphilitic nature of the disturbances Pain in the epigastrium seems the most frequent and essential symptom, the pains were of different types They did not spread as a rule but in a case personally observed, the pains spread upward toward the left in front Connection with the meals was usually evident, irrespective of the quality of the food The intermittent or constant pains were relieved in the early stages by heat alkalies etc and by vomiting, the pain stopped when the stomach was emptied, even in advanced cases Hematemesis occurred in 13 cases Vomiting was profuse coming on from one and a half to three hours after the meal Sarcina and Boas-Oppler bacilli were never found, and lactic acid only in 3 of the total 37 cases In 14 cases no free hydrocloric acid was found, and in 6 others extreme subacidity A palpable tumor was evident in 25 cases and in 18 the epigastrium was vaguely tender Syphilitic changes in the liver were found in 3 of the 7 necropsy cases, and enlargement of the spleen in 3 of these and in 1 other case A positive Wassermann reaction is not decisive as the proportion of syphilitics is so large everywhere The anemia and emaciation may suggest cancer, and transient benefit may follow treatment as for syphilis even in malignant disease Only when the benefit is durable is it decisive A sudden onset and freedom from pain in the intervals point to tabes

Duodenal Ulcer in Children—Alsberg found an old healed duodenal ulcer in a child of 2 along with a recently perforated ulceration The child recovered after suture of the ulcer and gastro-enterostomy The prognosis is generally grave, as the ulcer is seldom diagnosed until too late In the case described the melena and vomiting were ascribed to invagination, as the possibility of duodenal ulcer in so young a child was not considered Transfusion of blood after profuse melena may render good service If the condition permits, Kellings method of drawing up the pylorus with threads plus gastro-enterostomy, is promising, this was the technic applied in his case

Beitrage zur klinischen Chirurgie, Tubingen

1921 **122** No 1

Physiologic Basis on which Reaction Hyperemia and Collateral Circulation Develop W R Hess —p 1
*Hip Joint Disease R Scherb —p 20
*Retrogression of Goiter After Shifting A Strauli —p 44
*Operative Treatment of Exophthalmic Goiter E Bar —p 87
Accessory Intrathoracic Goiter H C Brunner —p 114
Gallstone Ileus K Schlapfer —p 122
Pathology of Single Kidney etc A Brunner —p 136
*Foreign Bodies in Air and Food Passages T Hug —p 153
Cysts in Mesentery or Omentum R Campell —p 165
*Mammary Cancer E. Wiesmann —p 181
*Fatal Hemorrhage After Tracheotomy K Schlapfer —p 212

Estimation of Hip Joint Disease—Scherb emphasizes the importance of analyzing the functional capacity of the diseased hip joint as an aid in diagnosis, prognosis, and in estimation of conditions generally He gives an illustrated description of an apparatus—the ischiometer—devised for the purpose of control of function and reports some illustrative examples of its records to show its clinical value

Retrogression of Goiter After Shifting of Part of the Thyroid—A man suffocating from the pressure from a very large old retrosternal goiter was relieved by shifting forward the large lower pole of the thyroid Nothing else was attempted but after healing by primary intention the goiter retrogressed until in seven months the neck was of normal aspect After an interval then of two or three months, the thyroid began to enlarge again and the man died at the seventeenth month Sträulis operation was practically an exothyropexy, and he compares with his case those on record in which this operation was done The mechanical conditions for carrying away the blood and secretion are evidently modified by such interventions, and this explains the changes in the goiter thereafter

Operative Treatment of Exophthalmic Goiter—Bär relates that on the whole the expectations were realized in the 27 cases described treated by ligatures or partial resection No aggravation occurred in any instance All were improved except 3 and a complete cure was realized in 13 cases There was recurrence later in 6 cases, but the recurrence was transient in most and was not severe in any The best results were obtained in recent, florid cases, primary or secondary but even in atypical chronic cases improvement may be anticipated with confidence, and restoration of the earning capacity Recurrence of the goiter is most common in endemic foci

Foreign Bodies in Air or Food Passages—Hug reviews his extensive experience with a nutshell, fishbone pill or other foreign body in the esophagus or bronchus and extols the immense assistance rendered by endoscopy in their removal

Mammary Cancer—Wiesmann says that 30 5 per cent are still living of the 106 women with mammary cancer given operative treatment in Brunner's service, 1896-1916 In four of the cases with recurrence, it did not develop until after an interval of three years

Fatal Hemorrhage After Tracheotomy—The fatal hemorrhage occurred during quiet sleep, seventeen days after the tracheotomy in a case of diphtheria, and six days after detubation In this as in several similar cases compiled, some small phlegmon was responsible for the arrosion and hemorrhage The cause was unmistakably some injury during the tracheotomy during the hooking back of the soft parts Defective hemostasis may be incriminated in some cases Such cases teach the necessity for extremely gentle manipulation of the tissues and scrupulous hemostasis

Deutsche medizinische Wochenschrift, Leipzig

June 9 1921 **47** No 23

Control of Work of Professional Mediums Sommer —p 645
Pharmacologic Observations II A Bornstein —p 647
*Vegetative Nervous System in Exophthalmic Goiter K Grunenberg —p 648
Conrad Function with Psychic Disturbance E Kretschmer —p 649
War Diet and Breast Fed Infants O Bossert —p 650
*Peculiar Pain in Flatfoot K Immelmann —p 651
Gangrene of Leg After Illuminating Gas Poisoning Riedel —p 651
Perforation of Gastric Ulcer De Bruine Ploos van Amstel —p 652
Lichenoid Dermatitis of Both Eyelids Fumio Yano —p 652
Furstenau Actinometer and Dosage of Ultraviolet Rays Furstenau —p 653
Milk Dilution in Infant Feeding Fetscher —p 654
Mechanism of Sex Transmission T Peterfi —p 655 Concln No 24 p 682
Infants Who Do Not Thrive Properly L Langstein —p 657
Gallstone Ileus P Bruck —p 658
Treatment of Frostbite Busch —p 658

Influence of Operation on Thyroid as Affecting the Autonomic Nervous System in Exophthalmic Goiter—Grunenberg reports that in twelve exophthalmic goiter patients and ten cases of hyperthyreosis the excitability of the vegetative autonomic nervous system was tested before and after operation Before the operation, the patients showed for the most part a sympathicotonic, but a minority presented a normal type of the epinephrin blood-pressure curve after injection of 1 mg of epinephrin In the group with the normal parabolic curve pronounced lymphatism was always present After the operation the excitability of the sympathetic system gradually decreased, so that the sympathicotonic epinephrin blood-pressure curve became normal In some cases it became even markedly vagotonic The results of other functional tests of the vegetative autonomic nervous system corresponded to these findings At the same time it was established that in sympathicotonic subjects the course of the epinephrin pulse curve corresponds closely to the blood pressure curve In spite of marked and rapidly increasing blood pressure, there is no primary retardation of the pulse The result of the investigations points to an elective sensitizing effect of hyperthyroidism on the sympathetic nervous system

Peculiar Pain in Flatfoot—Immelmann states that the patient complains of a sharp pain in the region of the balls of the toes when he walks On examination of the metatarsophalangeal joints between two fingers the patient usually admits the existence of typical pressure pain when pressure is exerted on the second or third joint, or (occasionally) on several joints at the same time Further examination will always reveal a mild type of flatfoot According to Hoffa, this pain is caused by irritation of the terminals of the nerves of the joints particularly the articular branches of the anterior tibial nerve, occasioned by overstretching of the articular ligaments We can rid the patient completely of this pain in a short time by prescribing a metal insole that extends from the heel to the balls of the toes, whereby the weight on the foot is shifted back to the middle of the foot, and the weight is thus taken off from the painful joint

Deutsche Zeitschrift fur Chirurgie, Leipzig

June 1921 **163**, No 1 2

Lymphosarcoleukemia T Diemer—p 1
Acute Necrosis of the Pancreas H Zoepffel—p 24
*Gas Cysts on the Intestines H Steindl—p 44
Collargol in Surgery and Gynecology K Boese—p 62
Surgical Tuberculosis P Herrass—p 85
Incarceration of Entire Small Intestine E Hempel—p 119
Deep Lymphangioma in the Neck H Godde—p 135

Lymphosarcoleukemia—Diemer reports the case of a previously healthy man of 42 who had influenza after serving through the war and first one and then the other femur fractured spontaneously All the lymph glands became enlarged and the blood showed typical lymphatic leukemia Other spontaneous fractures developed, and the assumption of lymphosarcomatous degeneration of the bone marrow and lymphatics was confirmed at necropsy The reaction to arsenic had been suggestive during life The development of the lesions and fractures had been strikingly symmetrical The single organs like the spine showed symmetrical arrangement of the lesions in each half

Acute Necrosis of the Pancreas—Zoepffel was able to save two of five operative cases of this kind since 1913, and he compares these cases with ten on record with only one recovery There was extensive retroperitoneal extravasation of blood at the first attack of "pancreas apoplexy" in these cases or repeated exacerbations of the acute necrosis of the pancreas In one of his cases, the young man of 19 had been having symptoms at intervals for three years, interpreted as gallstone colic The pains were in the liver region and spread to back and shoulders, and were accompanied by slight jaundice Finally an exceptionally violent attack with repeated vomiting of blood much weakened the patient, and the abdomen was tender throughout but most sensitive in the left lower quadrant Perforation of the gallbladder seemed the most plausible explanation of the grave condition of the extremely emaciated young man, but the laparotomy revealed the pancreas in a lake of fresh and old blood, resembling the condition with a ruptured tubal pregnancy The entire abdominal cavity was rinsed clean, an opening made in the left lower abdominal cavity for drainage and saline infused subcutaneously and by the vein The tampons in the bleeding area were all removed, one by one, in seventeen days There was a movement of the bowels the third day and regularly thereafter The young man had always been a hearty eater fond of sweets As the irritating, purulent, flaky secretion kept oozing from the drain he was put on an antidiabetes diet with large doses of sodium bicarbonate and under the influence of this the fistula healed by the end of the seventh week In the meantime the patient had rapidly recuperated, gaining 17 pounds in the first three weeks In Caro's case there had been symptoms for ten years before the operation The hemorrhagic tendency may have been from embolic processes or a general tendency from toxic action from the decaying pancreas tissue The blood may pass through the outlet of the pancreas into the duodenum and be vomited up In this case the hematemesis is a sign of severe hemorrhage in the pancreas Gallstones were found in some of the cases but not in the two with recovery here mentioned

Gas Cysts in the Abdomen—Steindl reports that pure cultures of an anaerobic bacterium were obtained from the gas cysts studding the intestines of the man of 67 with typical cystoid pneumatosis These bacteria must get into the lymph stream through some erosion in the bowel mucous membrane, and the single cysts result from the dilatation of the lymphatics as their outlets become clogged, and the gas produced by the bacteria accumulates in them

Treatment of Surgical Tuberculosis—Only 4 2 per cent of Herrass' 191 cases of surgical tuberculosis terminated fatally The cures and improvement in the other cases under combined heliotherapy and operative measures justify the highest hopes when treatment can be applied before the process has become as severe as was the rule in these cases Especially encouraging are the results of heliotherapy as a preliminary and supplement to resection Kidney, epididymis and testicle tuberculosis proved constantly so refractory to heliotherapy that no time now is wasted on this before operating In 16 cases of a tuberculous process in the talocrural joint only 56 2 per cent were cured and 56 5 per cent in the 23 knee cases, but all were cured of the 4 shoulder cases and 58 3 per cent of the 12 cases of caries of the pelvic bones and 80 5 per cent of the 36 cases of vertebral caries The age does not seem to affect the outcome with heliotherapy The cure of 71 4 per cent of 21 cases of hip joint processes confirms the value of heliotherapy in such cases 12 of the 21 in this group were over 25 years old including 2 in the forties He declares that results such as he reports call for application of heliotherapy on a large scale for surgical tuberculosis, but he emphasizes that provisions must be made for the course of treatment to be long enough to accomplish its purpose From five to thirty five months was required in the rib caries cases with an average of fourteen months The sanatorium in his charge is at Durrheim in Baden 700 meters above the sea and he does not trust exclusively to heliotherapy with or without resection but combines mineral baths iodoform glycerin and tuberculin treatment as indicated in the individual cases Besides a children's sanatorium there is one for soldiers with surgical tuberculosis

Retrograde Incarceration of Small Intestine in Hernia—Almost the entire small intestine had slipped down into the huge right femoral hernia, in the middle-aged woman but an operation restored conditions to clinically normal The traction had modified the circulation in a way to confirm the 'zugarkade' theory

Monatsschrift f Geb u Gynakologie, Berlin

June 1921 **54** No 6

*Bilirubinemia in the New Born K Hellmuth—p 341
Etiology of Embryomas F C Geller—p 352
*Cancerous Ovarian Dermoid Cysts D Eisenstadter—p 360
*Correction of Rectovaginal Fistula W Rubsamen—p 367

Bilirubinemia in the New-Born—Hellmuth found that the bilirubin content of the blood in fifty healthy women at term and during childbirth was no higher than in normal conditions A normal pregnancy does not injure the liver in the sense of augmented production of bile pigment He also declares that the placenta in normal conditions does not allow the passage of bile pigment from the fetus to the mother as some assert On the other hand he states that the bilirubin content of the blood in the new-born is in a materially higher percentage than in the blood of adults, sometimes ten times the average proportion His research on fifty just born normal infants confirms that insufficiency of the liver functioning is the main cause of jaundice in the new-born but that an important supplementary factor is the changes which the blood undergoes just before and after delivery supplying a further hematogenous source for the bilirubin This is confirmed by the delayed response to the diazo test for bilirubin—the delay testifying to a hemolytic source—and also the hematin line in the spectroscope

Cancerous Ovarian Dermoid Cysts—Eisenstädter states that in Halban's service at Vienna three of the sixteen ovarian dermoids in the last ten years were the seat of malignant disease in a total of 209 operative ovarian tumors One of the three cancer patients succumbed to postoperative pneumonia, the others to metastases in bladder or mesenteric glands

Treatment of Rectovaginal Fistula—Rubsamen applied the technic described with illustrations in two cases of radium fistula and in two congenital and one traumatic fistula in all of which it proved a complete success although healing was by primary intention only in two of the latter group The essential part of the technic is that the anterior portion of the sphincter ani is mobilized and shifted forward so that as the sphincter contracts it includes the sutured fistula in its contracting area He warns that after a radium burn, fully two years must be allowed to elapse before attempting an operation of the kind The cicatricial tissue does not become vascularized before this and until this is the case gangrene is almost certain to develop Another patient died from this cause the operation having been done only a year after the cervix cancer had been completely cured by the radium There was a rectovaginal and also a vesicovaginal radium fistula in this case, and the woman succumbed to the postoperative gangrene

Munchener medizinische Wochenschrift, Munich

June 3 1921 **68** No 22

Procedure for Testing Vascular Junction P Morawitz and G Denecke—p 659
*Management of Infected Abortions H Schottmuller—p 662
Abortive Treatment of Primary Negative Syphilis Mulzer—p 664
Mendelism in Medicine E Bleuler—p 666
Import of Blood Platelets in Blood Examinations Stahl—p 667
Treatment of Gonorrheal Rheumatism J Saphier—p 668
Clinical Aspects of Epidemic Encephalitis G Kahlmeter—p 669
Spread of Syphilitic Infection by Lymph Glands in Seronegative Period of Primary Stage Eicke and Schwabe—p 671
Treatment of Torticollis E Speer—p 672
Roentgen Treatment of Pointed Condylomas F Matt—p 674
Plastic Operations on the Urethra F Kroh—p 675
Operation on Trachea by Using Tracheoscope B Tenckhoff—p 676
*Repeated Injections of Blood in Pernicious Anemia A Waag—p 677
Placental Remnants After Births at Term E Engelhorn—p 677
Painless Evacuation of Body Fluids by Puncture Franke—p 679

Treatment of Infected Cases of Abortion—Up to 1910 Schottmuller treated all cases of abortion by manual evacuation with the exception of cases complicated by parametritis or salpingitis and those in which gonorrhea was diagnosed The mortality rate with such methods was 3 per cent During the period from 1910-1914 the mortality was reduced to 1 5 per cent in 1 500 digitally evacuated abortions probably owing to the fact that since 1912 the abortions infected with hemolytic streptococci have no longer been evacuated The total number of abortions in this period was 2 000 with a mortality of 7 4 per cent Schottmuller then gives the reasons that induced him since August 1914, to abandon digital evacuation entirely and to use only Winter's abortion forceps and a large blunt curet for removing portions of the fetus He proved definitely that during manual evacuation of the infected uterus through the finger introduced into the uterus and the pressure exerted by the other hand on the uterus from without the pathogenic bacteria that are present in large numbers on the endometrium are pressed directly into the open vascular lumina for in 77 per cent of the cases immediately after manual evacuation pathogenic bacteria (and only such) were found in the blood stream

Repeated Small Injections of Blood in Pernicious Anemia—Waag refers to the surprisingly good results secured of late by the profession through the use of repeated small doses of whole blood injected subcutaneously in pernicious anemia Pappenheim recommends the method because it is simple conservative and free from severe febrile sequels Carnot interprets the improvement that follows as due to an increased erythropoiesis of the bone marrow Waag reports in detail his remarkable success in treating a man who on admission to the hospital presented hemoglobin content of blood, 25 per cent erythrocyte count 285 000 and color index less than 1 After the usual arsenical preparations had failed, he injected subcutaneously into the thigh of the patient 5 c c of whole blood taken from the brachial vein of the donor A like injection was given the following day The effect was striking Two days after the first injection there was a marked improvement in the patient's general condition The hemoglobin had risen to 30 per cent and the erythrocytes to 1 500 000 The patient now received twice a week 5 c c of blood In a week the hemoglobin content had become 35 per cent and the erythrocyte count 2 000 000 In four weeks the hemoglobin was 55 per cent and the erythrocyte count 2,600,000 The patient had gained about 13 pounds and felt well Temperature was normal The urine was free from albumin, sugar and urobilin The patient had borne the injections (nine in all, 5 c c each) without other manifestation than a slight smarting sensation which was relieved by hot compresses and ichthyol bandages

Wiener klinische Wochenschrift, Vienna

June 2 1921 **34** No 22

*Pressure of Bile in Man W Robitschek and M Turolt—p 263
Lumbar Puncture and Syphilitic Exanthems Schreiner—p 264
Corrosion of Esophagus in the Gassed S Sternberg—p 265
Reduction of Abdominal Fat at Laparotomies Frist—p 266
*Dentation of Greater Curvature of Stomach Barsony—p 267

Secretory Pressure of Bile in Man—Robitschek and Turolt state on the basis of their investigations, that the bile in a vertical tube 5 5 mm in diameter (inside measurement) connected with the hepatic duct reaches a height of from 210 to 270 mm which depends on the secretory power of the liver cells intra abdominal pressure and the condition of contraction of the musculature of the bile ducts The pressure may be influenced by drugs Pilocarpin raises papaverin lowers the bile pressure

Dentated Outline of the Greater Curvature of Stomach—Barsony opposes the view that dentation of the greater curvature of the stomach is caused by peristalsis or spasm He presents evidence to prove that it is a sign of marked wrinkling of the mucous membrane

Zeitschrift fur Kinderheilkunde, Berlin

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*Case of Pure Pylorospasm M Mohr—p 111
Food Requirements in Myxedema M Ambrozic—p 117
Convalescents Serum in Prophylaxis of Measles Rietschel—p 127
Monosymptomatic Hematuria in Children E Nassau—p 133
Convalescents Serum in Prophylaxis of Measles F v Torday—p 148
Digestion Leukocytosis in Infants L Adelsberger—p 156
Epidemic Encephalitis in Children F Hofstadt—p 190
Spontaneous Gangrene of Feet in Two Children H Frenkel—p 213

Pure Pylorospasm.—Mohr knows of only two cases on record in which the symptoms had indicated stenosis of the pylorus but necropsy showed no trace of hypertrophy in this region He adds a third case to the list, the child dying when less than two months old from parenteral infection as the pylorospasm had begun to subside

Convalescents' Serum in Prophylaxis of Measles—Rietschel hails as great progress the efforts in this line to protect the younger children against measles and thus tide the younger ones past the danger age for measles His own experience has confirmed the efficacy of the procedure, but how are we to obtain enough convalescents' serum? Mothers are not willing to sacrifice their own children for the hypothetical protection of others but they would be willing to give some of their own blood to protect their own children against measles His experience indicates that the serum of adults who have had measles contains enough antibodies to protect young children against the disease or, if they contract it attenuates it to a remarkable extent Antibodies from the mother are probably responsible for the immunity of very young infants to measles In one ward that had been exposed to measles six of the infants were injected with serum from some nurses or interns and two developed measles, moderately severe in one case and mild in the other after an incubation of twenty days Adults' serum is thus not always a reliable preventive but if further experiences confirm that it usually confers an exceptionally mild character on the disease this may answer the purpose and may even prove to have special advantages

Monosymptomatic Hematuria in Children—Nassau remarks that we are still in the period of collecting material on which to base judgment as to the import in children of hematuria for which no cause can be discovered Mechanical nutritional and infectious-toxic factors may cooperate in some cases, and after their removal there may be no further hematuria But children who respond to slight causes with a tendency to hematuria should be kept under supervision, as a substandard vascular system, especially in the kidneys,

must be suspected Some children at puberty display a tendency to both hematuria and albuminuria whenever the circulation through the kidneys is hampered In 36 boys doing gymnasium work, he found erythrocytes in the urine after the exercise in 9 and albumin in one, the urine previously normal in all Herbst has reported similar findings in 27 per cent of 282 boys, in 11 per cent tube casts were also found, and the erythrocyturia was still more pronounced in these healthy boys after long walks Hematuria is one of the most constant signs of scurvy Finkelstein noted it in about 33 per cent of all infants with scurvy, but Nassau found it in 82 per cent of 22 children with scurvy The red urine in some of the cases was the first sign of trouble

Convalescents' Serum in Prophylaxis of Measles—Von Torday inoculated 261 children with convalescents' serum on thirty different occasions They had all been exposed to measles, but only 15 developed the disease In some of these refractory cases the serum had not been obtained at the proper period as established by Degkwitz, that is, from the seventh to the ninth day of convalescence In every instance when the serum was injected between the second and sixth day after exposure it proved an absolute protection, even in wards where measles had long been prevailing The epidemic was completely arrested as soon as enough serum could be obtained to inoculate all the children The amount of serum injected ranged from 7 to 22 c c at first, but in the latest series of 81 children only 3 5 or 4 c c was used The duration of the immunity conferred can be estimated from the fact that 3 of the children developed measles from seventy-two to seventy-five days later His article issues from the Budapest state children's asylum which shelters on an average 250 sick and up to 150 well children

Spontaneous Gangrene in Children—Frenkel has been able to find only fifty cases of this kind on record and in them the spontaneous gangrene was traceable to measles diphtheria syphilis or other infectious process in all but one in which there was severe chlorosis and four with Raynaud's disease He encountered two cases himself, almost simultaneously both in children with advanced pulmonary tuberculosis In one both feet were affected

Zeitschrift fur urologische Chirurgie, Berlin

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*Trigon of Bladder in Mammals F C Krusa and R Paschkis—p 1
*Septum in Bladder A Zinner—p 54
Diverticula of the Bladder K Simon—p 59
*Factitious Pyelitis F Necker—p 69
Cystography of the Bladder H Boeminghaus—p 92
Edematous Tumor in Trigonum K Paschkis—p 106

The Trigon in Mammals—This study in comparative anatomy embraces several specimens of twenty-four different species of animals from sea urchins to camels, besides man, domestic animals and monkeys

Septum in Bladder—A man of 68 applied to Zinner for relief as he had had difficulty for a year in urinating and there was pus in the urine Cystoscopy revealed typical vesica bipartita, the septum projecting downward from the fundus of the bladder The consequences were like those of a huge diverticulum Resection as with a diverticulum is the only means of warding off serious trouble This patient would not consent to this until it was too late He died with symptoms of acute insufficiency of the kidneys nine days after the operation

Efficacy of Neo-Arsphenamin in Pyelitis—Necker applies the term 'artificial pyelitis' to ascending infection of the kidney pelvis from self-inflicted injury of the bladder to escape military service He reviews the whole field of factitious disease of the urinary apparatus, and then describes seventeen cases on record of cystitis of the trigon region with leukocytes in the urine from each kidney In a recent series of nine similar cases he obtained a confession that the cystitis had been induced by injection of urine from another person to which some quinin or other powder had been added The injection into the urethra was made with such force that the fluid entered the bladder It set up an inflammatory process which in time involved the kidney pelvis on both sides The pyelitis was the same in all the cases in those with urine from healthy men as well as from those with gonorrhea The trigon cystitis soon healed in all, but the abacterial pyelitis developed a chronic course The conditions indicate that the inflammatory process spread step by step upward from the bladder along the mucosa of the ureters to involve finally the kidney pelvis Ascending infection by migrating micro-organisms can certainly be excluded, he declares in these cases They thus throw light, like a laboratory experiment on the origin of pyelitis In one of the cases this factitious pyelitis involved the parenchyma of the kidney the clinical picture that of grave pyelonephritis He relates some further experiences in this line and warns that even with severe bilateral infection of the upper urinary passages we must bear the possibility in mind that these may be the sequels of factitious cystitis

This artificial pyelitis is extremely chronic rebellious to years of the usual measures, but it seems to yield promptly to neo-arsphenamin Cases are known in which the cysto pyelitis of up to ten years standing in tabetics subsided after a single injection of neo arsphenamin Necker has found neo arsphenamin surprisingly effectual in 150 cases of pyelitis and cystitis in the last four years, but pathologic conditions in the kidney proper did not respond to it It fails also when there is obstruction to the flow of urine but otherwise it acts apparently regardless of the kind or number of causal bacteria or the intensity of the suppuration in the pelvis Why it inevitably fails when the kidney proper is involved, is a mystery which he is now studying

Zentralblatt fur Chirurgie, Leipzig

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Mixed Infection in Wound Diphtheria Frankenthal—p 782
Thymus Lipomas S Yamanoi—p 785
*Gastropexy H Havlicek—p 787
Excision of Neuroma Cures Trophic Finger Ulcer J Kirner—p 790
Screw in Appendix as Cause of Appendicitis G Kelling—p 792

Gastropexy—Havlicek uses free fascia transplants to reconstruct the hepatogastric ligament for gastropexy The motility of the viscera is not impaired by adhesions thereafter and whereas in other methods there is a tendency for the supporting band to stretch with this method it contracts

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Thoracoplasty in Persistent Empyema Cavity Lowen—p 814
Electric Currents in Granulating Wounds Melchior Rahm—p 816
Splanchnic Anesthesia by Braun Method G Buhre—p 818
Direct Anesthesia of the Peritoneum Baruch—p 821
Asepsis in Relation to the Appendix M Kaehler—p 823
Trophic Ulcers After Nerve Resection F Bruning—p 824

Splanchnic Anesthesia by the Braun Method—Buhre is assistant in Braun's service and the Braun technic for blocking the splanchnic nerves has been applied there in 200 cases during the last two and a half years and all without by-effects or after disturbances He recalls that not all of the experiences with splanchnic anesthesia reported from different sources are favorable especially as regards the by-effects, and some of the reports are of such a nature as to cause many surgeons to hesitate about using the method He has found the Braun method superior to the Kappis method With the former in the 200 cases there have been none of the bad results reported in regard to the Kappis method, such as deaths collapse and lowering of blood pressure By the Braun method the splanchnic nerves are blocked after opening the abdomen With the Kappis method the anesthetic is introduced from the rear Buhre thinks it is possible that in the Kappis method the needle is not carried far enough forward, to the anterior surface of the bodies of the vertebrae and the injection is made too near to the vertebral canal or even in the spaces between the transverse processes whence a too rapid resorption of the solution into the canal takes place [Buhre described as follows the Braun technic in a previous communication mentioned in THE JOURNAL at the time, 75 279, 1919 After the median incision above the umbilicus to the xiphoid process, the left lobe of the liver is drawn upward and toward the right The right forefinger is then worked down to the center of the spine below the xiphoid process pushing the aorta out of the way With the left hand the needle 12 cm long is introduced sliding along the right forefinger until the tip after piercing the peritoneum reaches the spine There are no well vascularized parts covering the spine in this region After ascertaining

that no blood escapes from the needle, 100 c.c. of the 0.5 per cent. solution of procain and epinephrin is injected. The fluid infiltrates through the region including the celiac plexus and the splanchnic nerves. A single injection answers the purpose. The stomach, colon and small intestine can be manipulated without the patient's reacting, as also the other organs in the upper abdomen. The anesthesia lasts for from one and a half to two hours.] The method is adapted more for chronic conditions. The only failures in his experience were when the needle for any reason could not be introduced far enough upward, under the diaphragm to reach the branches of the splanchnic nerves.

Zentralblatt fur Gynakologie, Leipzig

June 4, 1921, **45**, No. 22

*Changes in Uterus Due to Gas Bacilli. Marx.—p. 773
Diagnosis of Twin Pregnancy. K. Kautsky.—p. 777
Twilight Sleep. P. W. Siegel.—p. 780
Formation of Vagina from Rectum. A. Nemes.—p. 787
Formation of Vagina. H. Brossmann.—p. 789

Changes on the Surface of the Uterus Effected by Gas Bacilli.—Marx reports three cases to show that while multiple small dehiscences on the surface of the uterus may occasionally be produced by the action of a dull instrument, yet it is more likely caused by gas bacillus infection, which will be easily diagnosed by a bacteriologic test. In the case of women in whom induced abortion is suspected the finding of a gas bacillus infection has therefore, great forensic importance. Such an infection may occasionally occur in connection with a spontaneous abortion.

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Menstrual Blood Contains No Specific Poison. H. Saenger.—p. 819
Method of Temporary Sterilization of Women. H. Hellendall.—p. 822
Sterilization by Knotting the Tubes (Flatau). Madlener.—p. 825
A Method for the Temporary Sterilization of Women (Wessel) and Problems of Sterility (van de Velde). M. Blumberg.—p. 825
Securing Sample Secretion from Female Urethra. Calmann.—p. 827

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High Blood Pressure and Kidney Disease. E. Kylin.—p. 441

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

May 21, 1921, **1**, No. 21

Classification of Manic Depressive Psychoses. G. Jelgersma.—p. 2779
Transfusion of Blood in Pernicious Anemia. G. J. Bon.—p. 2793
*Ultimate Results of Treatment of Glaucoma. J. H. A. T. Tresling.—p. 2802
Treatment of Arthritis Deformans. W. F. Wassink.—p. 2811
*Chronic Nervous Appendicitis. M. W. Scheltema.—p. 2815
Epidemic Encephalitis in Girl of Three. L. S. L. Meijer.—p. 2819

Blood Transfusion in Pernicious Anemia.—Bon advocates following the Americans in this line instead of trusting too blindly to iron, arsenic and change of diet' and reports two severe cases to illustrate the benefit that may be derived from transfusion of blood.

Outcome of Glaucoma Operations.—Tresling tabulates the findings in thirteen trephining cases of glaucoma reexamined years later. He was surprised to find that vision had progressively declined and the visual field become more and more restricted with the passing years. This he anticipated in the simple iridectomy cases but to find such disappointing results after trephining was a great disappointment.

Treatment of Arthritis Deformans.—Wassink calls attention to his success in relieving a distressing case of deforming arthritis of the knee in a woman of 60. He became convinced that the pains were from neuritis and the temporary relief from transient blocking of the nerve encouraged him finally to sever the nerve fibers innervating the capsule. He describes his technic for this and the benefit therefrom. There has been no return of the pains during the year since, and even if they should return later this year of relief justifies this symptomatic intervention. It restored practically the use of the knee.

Chronic Nervous Appendicitis.—Scheltema analyzes seven cases of nervous disturbances headache, melancholia irritability, insomnia dizziness habitual constipation, general weakness, poor appetite inability to think clearly, and temperature slightly above normal at times, usually in the middle of the day—all of which subsided after operative treatment of chronic latent appendicitis.

Hospitalstidende, Copenhagen

June 1, 1921, **64**, No. 22

*Prolapse of Rectum in Children. H. Møller.—p. 337
Indications for Radium Treatment of Uterine Cancer. E. Petersen.—p. 342

June 8, 1921, **64**, No. 23

Infantile Progressive Torsion Spasm. A. Wimmer.—p. 353. Concln. in No. 24, p. 369
History of Cataract Operations. P. Hauberg.—p. 363

Rectal Prolapse in Children.—Møller has applied Ekehorn's method in over fifteen cases of rectal prolapse in children since 1910. The prolapse is reduced under general anesthesia, and then a needle is passed through all the tissues at the lower end of the sacrum into the rectum and out through the anus where the needle is threaded, and it is then drawn back. The procedure is repeated on the other side, the suture threads are tied over gauze and the redundant mucosa is thus held up in place. No after-treatment is required the threads are removed the fourteenth day. The advantages of this simple treatment are obvious he says, and the results surpassed anticipations. Defecation is normal in all the children that have been reexamined.

Hygiea, Stockholm

May 31, 1921, **83**, No. 10

Skin Lesions with Lymphatic Leukemia. E. Sahlgren.—p. 321
*Progressive Lipodystrophia in Girl of Six. G. Janson.—p. 329

Skin Lesions with Lymphatic Leukemia.—Sahlgren reports a case of what he calls pure leukemic lymphadenosis, running a two years' course in a previously healthy man of 49. It was accompanied by enormous enlargement of lymph glands predominantly in neck, chin, arms and groin with edema and discoloration and patches of infiltration at various points but without discoloration.

Progressive Lipodystrophia.—The typical emaciation of the face and neck does not extend below the navel, the child's outlines are normal below this. The skin is dry and the lymph glands prominent. The child's mother was under treatment for syphilis at one time.

Upsala Lakareforenings Forhandlingar, Stockholm

June 8, 1921, **26**, No. 3/4

Psychic Processes from Endocrine Standpoint. J. A. Hammar.—p. 177
Impalement Injuries. Five Cases. P. Haggstrom.—p. 205
*Immunity to Diphtheria and the Schick Reaction. S. Elvall.—p. 219
Agglutination Test in Typhus. C. Naslund.—p. 265

Impalement Injuries.—Häggstrom relates the favorable outcome in five cases of injury of the perineum from some sharp implement given treatment in Petren's service in two years. An exploratory laparotomy is indispensable whether the injury was through perineum or anus, the latter was the case in three of the five instances. He cites further two other cases in Scandinavian literature and recalls that Silbermark in 1911 had compiled 224 cases.

Immunity to Diphtheria. Schick Reaction.—Elvall obtained a positive response to Schick's test with intradermal injection of diphtheria toxin in all persons with untreated clinical diphtheria, but the test was constantly negative in those that had been given antitoxin. In 11 bacilli carriers the response was positive in 37 per cent. His experience with 109 subjects seems to indicate that the degree of inflammation in the reaction is more instructive than the extent of the inflamed area. When applied only once the response should be estimated at the forty-eighth or seventy-second hour, preferably the latter. He found that persons giving a weak reaction seemed to get rid of their bacilli sooner than those showing a strong reaction.

Agglutination Test in Typhus.—Naslund reviews seven pages of literature on the Weil-Felix reaction in typhus and whether the proteus cultivated from typhus serum is responsible for the agglutination or not. He then analyzes the results of his own research. His conclusion from the whole is that agglutination of *Proteus X 19* is specific for typhus virus but not specific for the proteus.